Chapter 3. Quality of Health Care

Introduction

Many studies and commentators have pointed out the gap between ideal health care and the actual health care that Americans often receive.[1] All too frequently, patients receive care that does not meet clinical standards for "best practice" or that responds insufficiently to the needs of individual patients. As medical knowledge and practice become more complex, quality-related problems are likely to persist or worsen. This is especially worrisome given the increased demands on the health care system posed by the aging of the American population. Fundamental changes may be needed to address a health care delivery system that is decentralized and that has not taken full advantage of advances in information technology to improve quality.

While disparities in access to health care and receipt of health care services have been studied for many decades, the study of disparities in the quality of health care is relatively new. Published just last year, the Institute of Medicine's report, *Unequal Treatment: Confronting Racial and Ethnic Disparities in Healthcare*, provided definitive evidence that racial and ethnic disparities in quality of health care exist across a range of illnesses and health care services.[2] Much still remains to be learned, however, about the magnitude and extent of disparities in the quality of health care related to socioeconomic factors. Moreover, only recently have scientists and quality improvement experts begun to address the issue of how best to measure, track, and improve quality of health care in diverse populations.[3]

In 2001, the National Quality Forum (NQF), a private organization seeking to develop and implement a national strategy for health care quality measurement and reporting, convened experts to consider two overarching questions:

- Can existing, commonly used health care quality measures appropriately address the needs of minority patients, or are new measures needed to more accurately evaluate minority health care quality?

- What unique challenges are involved in reporting health care quality information to minority consumers?

The conclusions and recommendations of these experts guided the work for this first NHDR.[4] The recommendation to use existing measure sets for studying the quality of health care of minority populations led to the adoption of the consensus measure set developed for the first NHDR.

Hence, whenever possible, the NHDR and the NHQR use the same measures of quality of health care. This is not always possible, however, due to sample size constraints and the lack of reliable information on race, ethnicity, or socioeconomic status in some databases. As a result, NHDR dropped 12 measures from the NHQR quality of care measure set. For 5 additional measures,

alternative data sources with reliable information on race and ethnicity were identified and used. These are:

- CMS's End-Stage Renal Disease (ESRD) Clinical Performance Measures Project (CPMP) for ESRD measures
- CMS's Nursing Home Resident Profile Table (RPT) database for long-term care measures.

In addition, sample size was often a limiting factor for measures of quality of health care, which are frequently restricted to persons with particular medical conditions. Often, insufficient sample sizes of individuals affected by specific conditions were available to produce reliable estimates of the quality of health care for many racial, ethnic, and socioeconomic groups.

Both the NHQR and the NHDR organize the quality of care measures into four main categories:

- Effectiveness (i.e., care based on scientific knowledge; it is provided to all patients who could benefit and not provided to patients unlikely to benefit);
- Safety (i.e., care that avoids injuring patients with care intended to benefit them);
- Timeliness (i.e., care that reduces waiting times and delays in receipt of care); and
- Patient centeredness (i.e., care that is respectful and responsive to the individualized needs, preferences, and values of patients).

This chapter will examine racial, ethnic, and socioeconomic disparities in quality of health care for the entire population. In it, various racial and ethnic groups, as well as people of differing socioeconomic status, are compared for each of the quality of care measures. Summary tables present disparities across all measures and share a common key:

Key to Quality of Health Care Tables
●: Selected population and comparison population receive about same quality of health care
◓: Selected population receives better quality care than the comparison population
◒: Selected population receives worse quality care than the comparison population
○: Data are collected but do not meet criteria for statistical reliability

Because of the large volume of measures and populations, this chapter presents only a small subset of the findings. It focuses upon areas in which disparities are prevalent either across multiple populations or across several related measures and illustrates specific types of disparities with data that represent existing measures. When *Healthy People 2010* measures are available, these measures are highlighted.

For an analysis of disparities in quality of health care as they relate to priority populations, as defined in the Agency for Healthcare Research and Quality's (AHRQ) authorizing legislation, see Chapter 5. Because many disparities cut across multiple populations, Chapter 5 focuses on disparities that are specific to each population group.

Effectiveness

Key Finding:

- Patient race, ethnicity, and socioeconomic status are important indicators of the effectiveness of health care.

The effectiveness of health care can be defined as the extent to which scientifically proven services and treatments are provided to all who could benefit and not provided to those unlikely to benefit. Prerequisites to the measurement of effectiveness include: evidence that a given treatment works and established guidelines that govern the types of patients to whom the treatment should be applied. Of the various elements of health care quality, effectiveness has been the most extensively studied.

The impact of disparities in health care is specific to particular conditions. This section examines disparities in the effectiveness of care for:

- Cancer
- Chronic kidney disease
- Diabetes
- Heart disease
- HIV/AIDS
- Maternal and child health
- Mental health
- Respiratory diseases
- Long term care

Cancer

Key Findings:

- Minorities and persons of lower socioeconomic status are less likely to receive cancer screening services and more likely to have late-stage cancer when the disease is diagnosed. *Exception:* Black women have higher screening rates for cervical cancer.
- Blacks and persons of lower socioeconomic status also have higher death rates from cancer.

Why cancer is important

Cancer is the second leading cause of death in the United States after heart disease, and cancer causes one in four deaths.[5, 6, 7]

- In 2003, an estimated 1.3 million persons in the United States will be diagnosed with cancer and over 550,000 persons will die from it.[8] More than half of new cancer cases and cancer deaths can be attributed to four cancers: lung, colorectal, breast and prostate.[9] Lung cancer alone causes over 150,000 deaths per year.[10, 11]

- While cancer incidence rates have increased gradually in recent years, cancer death rates have declined.

- Economic costs of cancer are high; in 2002, total costs exceeded $171 billion, and direct costs for physicians, hospitals, and drugs exceeded $60 billion.[12]

Cancer incidence and death rates vary by race and ethnicity.

- Blacks have a 10% higher cancer incidence rate and a 30% higher cancer death rate compared with whites.[13] While cancer death rates are declining more quickly for blacks compared with whites, cancer survival is lower among blacks for almost all cancers regardless of site or stage.[14] Other minorities are disproportionately affected by select cancers.

- Compared with whites, Hispanics have higher rates of cervical, esophageal, gallbladder, and stomach cancer; Asians have higher rates of stomach and liver cancer; and Alaska Natives have higher rates of colorectal cancer.

Cancer care also varies by race, ethnicity, and socioeconomic status.[15]

- Studies indicate differences in screening for breast cancer[16] and colorectal cancer.[17] Some populations also are diagnosed with prostate cancer at earlier stages of the disease, while others are more likely to have it diagnosed at a later stage.[18]

- Differences in primary treatment of breast cancer,[19, 20, 21, 22] cervical cancer,[23] colorectal cancer,[24] early stage lung cancer[25] and prostate cancer,[26, 27] as well as adjuvant therapy for breast cancer,[28, 29] colorectal cancer[30, 31] and prostate cancer,[32] exist.

- Research also indicates that there are both differences in follow-up care after diagnosis of breast cancer[33] and colorectal cancer[34, 35] and differences in health care expenditures by cancer patients.[36]

How the Nation is doing

NHQR Findings:
The NHQR found that the rates of cervical cancer and colorectal cancer diagnosed at late stage have declined over time. However, delays in screening for breast, cervical and colorectal cancer remain. In addition, patterns of hospice use suggest that patients with cancer are not placed in palliative care settings until very close to death; median length of stay by cancer patients in hospice is just 15 days. See NHQR for details.

NHDR Findings:
The NHDR examines three aspects of cancer care (Tables 1 and 2):

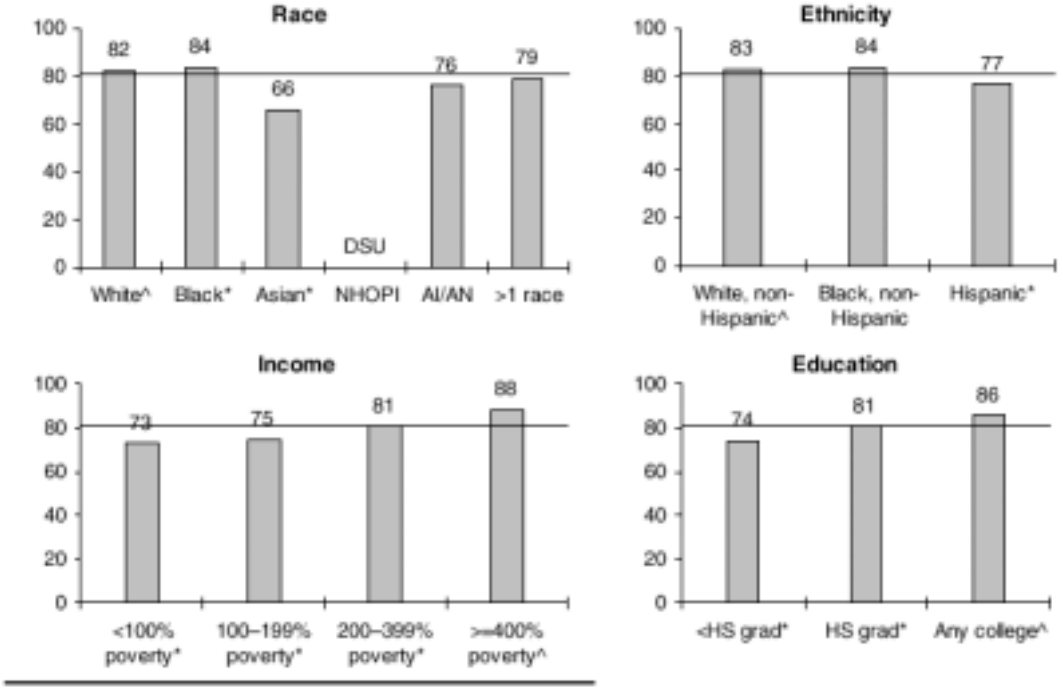
- Screening for breast, cervical, and colorectal cancer
- Cancer treatment
- Palliative care (e.g., hospice care)

Screening for breast, cervical, and colorectal cancer is a highly effective means of reducing mortality caused by these cancers. Mammography can detect breast cancer at an early stage when chances for cure are highest. Pap testing can detect precancerous cervical changes and prevent the progression to invasive cervical cancer. Fecal occult blood testing and lower endoscopy can detect precancerous colorectal polyps and prevent the development of colorectal cancer.

Yet minorities and persons of lower socioeconomic status are less likely to receive cancer screening services. For example, black, Asian, and American Indian or Alaska Native (AI/AN) women aged 40 and over are less likely than white women to receive mammography. Similarly, Hispanic women are less likely to receive mammography compared with non-Hispanic white women. Lower income, less educated, and uninsured women are less likely to receive mammography compared with higher income, better educated, and privately insured women, respectively. (Source: NHIS, 2000)

Overall, 81% of women 18 and older report a Pap smear in the past 3 years (Figure 1) (NHIS, 2000). Although certain minorities and persons of lower socioeconomic status are less likely to receive cancer screening, there appears to be no significant difference in Pap smear rates between black and white women.

Figure 1. Percent of women (18 and over) who report they had a Pap smear within the past 3 years, age-adjusted.
(U.S. total = 81%)



^Indicates reference group.
*p<0.05 and relative rate >10% for comparison of group with reference group. Note that a relative rate>10% is achieved for the inverse of this measure, percent of women who report that they did not have a Pap smear within the past 3 years.
Key: NHOPI=Native Hawaiian or Other Pacific Islander; AI/AN=American Indian/Alaska Native; HS=High School
DSU=Data do not meet the criteria for statistical reliability, data quality, or confidentiality.
Source: National Center for Health Statistics, National Health Interview Survey, 2000.

Racial, ethnic, and socioeconomic differences in cervical cancer screenings:

- **Asian, Hispanic, low income, and less educated women are less likely than the general population to report having Pap smears.**
- **However, black women are more likely than the general population to report having Pap smears.**

Asian women report that they have not had a Pap smear in the past 3 years (34%) more frequently than whites (18%) or blacks (16%). Hispanics (23%) are also more likely to have not had Pap smears than their non-Hispanic white counterparts (17%). Similarly, poor[1] (27%), near poor[2] (25%), and middle income[3] (19%) women are more likely than high income[4] women (12%), and women with less than a high school education (26%) and high school graduates (19%) are more likely than women with any college education (14%) to report not having a Pap smear in the past 3 years.

[1] "Poor" is defined as persons with family incomes less than 100% of Federal poverty thresholds.
[2] "Near poor" is defined as persons with family incomes between 100% and 199% of Federal poverty thresholds.
[3] "Middle income" is defined as persons with family incomes between 200% and 39% of Federal poverty thresholds.
[4] "High income" is defined as persons with family incomes of 400% or more of Federal poverty thresholds.

Without screening, cancers may not be detected until they grow large or metastasize to distant sites and cause symptoms. Such late stage cancers are usually associated with more limited treatment options and poorer survival. Overall, minorities are more likely to be diagnosed with late-stage breast cancer and colorectal cancer compared with whites. Data on cancer diagnoses at late stage come from the Surveillance, Epidemiology and End Results (SEER) database.

Rates of cancer death may reflect a variety of factors not associated with health care such as genetic disposition, diet, and lifestyle. However, screening and early treatment can lead to significant reductions in mortality, particularly for breast and cervical cancer.

Cancer death rates tend to be higher among blacks and people of lower socioeconomic status. However, death rates from all cancers are lower among APIs (125 per 100,000 population) and AI/ANs (127 per 100,000) compared with whites (198 per 100,000). Cancer death rates are also lower among Hispanics (121 per 100,000) compared with non-Hispanic whites (203 per 100,000), but highest among blacks (250 per 100,000) (National Vital Statistics System – Mortality, 2000). Mortality statistics include educational attainment of decedents age 25 to 64. Among persons age 25 to 64, rates of cancer death from all cancers are also higher among persons with less than a high school education (141 per 100,000) and high school graduates (141 per 100,000) compared with persons with any college education (75 per 100,000)

At the end of life, many cancer patients benefit from palliative care in hospices. Data on palliative care only permit comparisons of blacks and whites. No evidence of a significant black-white disparity is present (Source: National Home and Hospice Care Survey, 2000).

Overall, there are significant disparities in cancer screening, diagnosis and outcomes. Many racial and ethnic minorities and persons of lower socioeconomic position persons are less likely to have indicated cancer screening, are more likely to have late-stage cancer when cancer is diagnosed, and are more likely to die from cancer. A notable exception: black women have higher screening rates for cervical cancer and no evidence of later stage cervical cancer presentation. While not clearly causally related to the lack of disparity, effective community-based cancer screening and outreach programs may be responsible.

Chronic Kidney Disease

Key Finding:

- While there are racial differences in the adequacy of hemodialysis and likelihood of transplantation, it is unclear to what degree this may be related to underlying differences in severity of illness, comorbidities, or patient preferences.

Why chronic kidney disease is important

Chronic kidney disease has been defined as structural or functional damage to the kidney with or without impairment of the kidney's ability to filter water and waste from the body.[37]

- Using this definition, 11% of the U.S. adult population has chronic kidney disease.[38] Of these 19.2 million persons, 8.3 million have moderate impairment of the kidney function and almost 400,000 have ESRD requiring renal replacement therapy to sustain life.[39]

- Each year, almost 100,000 new ESRD patients begin treatment with either dialysis or renal transplantation, and about 70,000 ESRD patients, 19% of the total ESRD population, die.

- Expenditures of the ESRD program totaled over $19 billion in 2000, of which the Medicare program paid $14 billion.[40]

Racial and ethnic minorities develop ESRD at a younger age and have rates of ESRD that are several-fold higher than whites. In spite of these differences, racial and ethnic minorities tend to have better survival after development of ESRD compared with whites.[40]

However, research has demonstrated that racial and ethnic disparities in care for chronic kidney disease exist.[41] There are significant differences in the rate of referral to renal transplant centers, placement on a waiting list, timing of placement on a transplant waiting list, and receipt of a kidney transplant.[42, 43]

How the Nation is doing

NHQR Findings:
The NHQR found that management of ESRD has improved over time. While the numbers of renal transplants have increased in recent years, too few transplants take place. Specifically, only 20% of ESRD patients are placed on a transplantation waiting list and only 20% of these persons actually succeed in getting a new kidney. (See the NHQR for details.)

NHDR Findings:

The NHDR examines two aspects of care for chronic kidney disease (Table 3):

- Management of ESRD

- Renal transplantation

Management of ESRD often involves dialysis to remove bodily waste and fluid. Data on the management of hemodialysis patients come from CMS's End Stage Renal Disease Clinical Performance Measurement Program. This quality improvement program has led to dramatic improvements in hemodialysis, as well as reductions in differences in adequacy of dialysis between black and white hemodialysis patients.[44] Compared to white adults (86%), black adults achieve adequate hemodialysis[1] less often (82%), while Asian adults achieve it more often (92%). In contrast, evidence of significant racial or ethnic disparity in management of anemia, commonly caused by ESRD, is not present.

Renal transplantation offers many advantages over dialysis including improved long term survival. Data on renal transplantation come from the United States Renal Data System (USRDS). Compared with whites (26%), blacks (14%) and AI/AN (13%) are less likely to report registration for kidney transplantation. Compared with non-Hispanic whites (28%), Hispanics (16%) are also less likely to report kidney transplant registration. Actual receipt of a kidney transplant within 3 years of renal failure is lower among blacks (10%), APIs (20%), and AI/ANs (11%) compared with whites (26%); it is also lower among Hispanics (17%) compared with non-Hispanic whites (28%).

In summary, there are significant racial disparities in the adequacy of hemodialysis and likelihood of transplantation. However, it is not clear to what degree these disparities may be related to underlying differences in severity of illness, comorbidities, or patient preferences. Regardless, quality improvement strategies that have resulted in demonstrable reductions in black-white differences in hemodialysis may offer important insights into efforts to reduce health care disparities.

[1] "Adequate hemodialysis" is defined as a urea reduction ratio of 65% or higher.

Diabetes

Key Findings:

- While blacks and Hispanics have higher complication rates from diabetes, there are very small differences in receipt of recommended diabetic services.

Why diabetes is important

The prevalence of diabetes has risen in recent years, and this trend is projected to continue. A chronic condition, diabetes usually can be effectively controlled through a combination of primary care, specialty care referral, and patient self-management.[45, 46] The benefits of controlling glycemia, lipids, and blood pressure and of screening for diabetic retinopathy, nephropathy and foot disease are well demonstrated and form the basis for regularly published standards of care.[47] Unfortunately, recommended diabetes care is often not achieved.[48]

National statistics on the disease highlight the challenge it poses:

- Diabetes afflicts over 17 million people in the United States, including 20% of persons over age 65, and about one million new cases are diagnosed annually.

- Diabetes was the sixth leading cause of death in 1999, when about 200,000 death certificates listed diabetes as an underlying or contributing cause of death.

- Diabetes is also the leading cause of blindness, nontraumatic lower extremity amputation, and ESRD, and increases the risk of heart disease, stroke, neuropathy, and complication of pregnancy. [49, 50]

- The costs of diabetes total about $132 billion, including over $90 billion in direct medical expenditures and about $40 billion due to lost productivity and premature death.[51]

Significant racial, ethnic, and socioeconomic differences in diabetes have been observed.

- The prevalence of diabetes is higher among blacks and Hispanics and among less educated persons.[52]

- Blacks, American Indians and Hispanics have higher diabetes death rates. Blacks also have higher rates of serious complications from diabetes, including higher rates of ESRD due to diabetes[53] and higher rates of lower extremity amputation.[54, 55] Black diabetics are more likely than white diabetics to receive patient education[56] and to be treated with insulin.[57]

How the Nation is doing

NHQR Findings:
The NHQR found that only a fifth of diabetics receive all five services that are commonly recommended (i.e., annual retinal eye exams, annual influenza vaccinations, annual HbA1c checks, annual foot exams and biannual lipid profiles). While hospitalizations for uncontrolled diabetes fell significantly between 1994 and 2000, rates of lower extremity amputation have remained stable. (See the NHQR for details.)

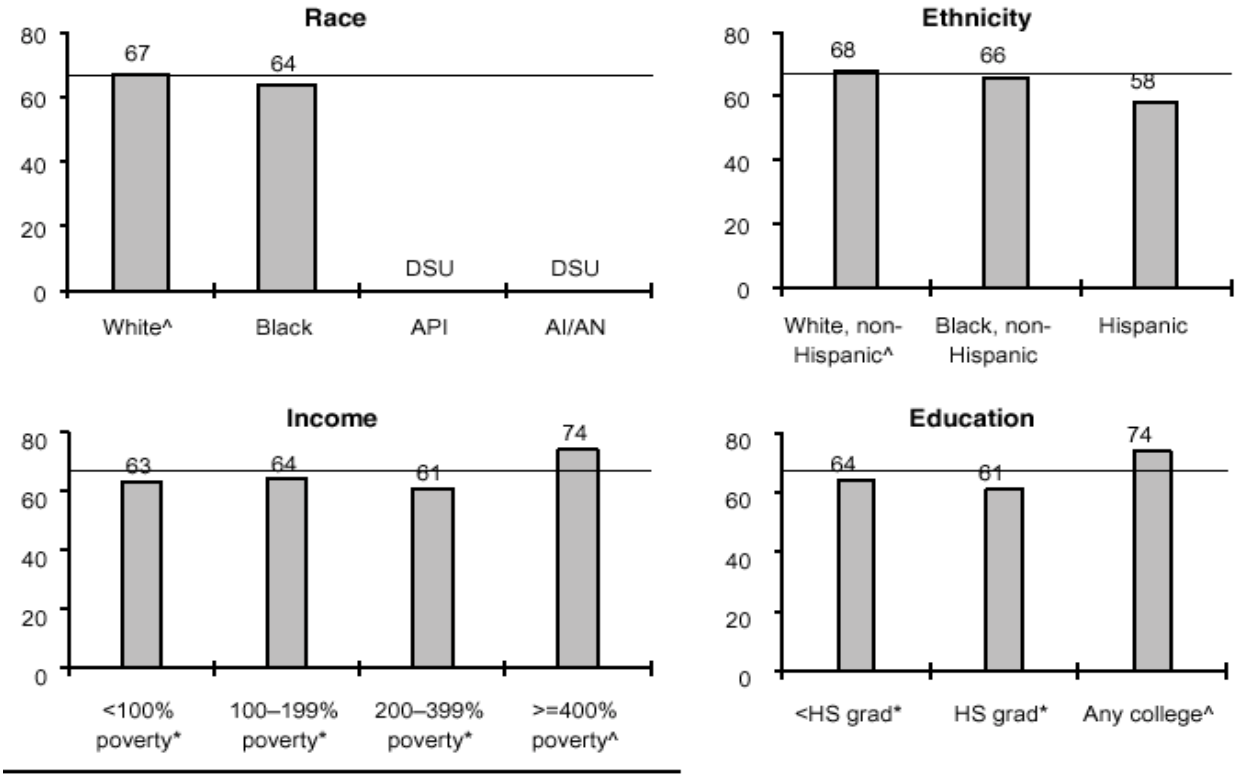
NHDR Findings:
The NHDR examines two aspects of the management of diabetes (Tables 4 and 5):

- Receipt of diabetes services
- Hospitalizations for diabetes and its complications

Lower income and less educated adults with diabetes are less likely to report eye exams, but racial or ethnic differences are not significant. Patients with diabetes require multiple health care services to stay healthy, including: periodic hemoglobin A1c measurement to maintain optimal glycemic control; screening for diabetic eye and foot complications; screening for elevated lipids, which is often associated with diabetes; and immunization against influenza, which can be particularly severe among diabetic patients.

Diabetic patients of lower socioeconomic position are less likely to receive some recommended diabetic services. For example, poor (63%), near poor (64%), and middle income patients (61%) are less likely than those with high incomes (74%) to receive an annual retinal eye examination. Similarly, those with less than a high school education (64%) and high school graduates (61%), compared with persons with any college education (74%), are less likely to undergo annual retinal eye exams (Figure 2) (MEPS, 2000). In contrast, racial and ethnic differences in receipt of diabetic services are relatively small.

Figure 2. Percent of adults with diabetes who had a retinal eye examination in past year (U.S. total = 67%)

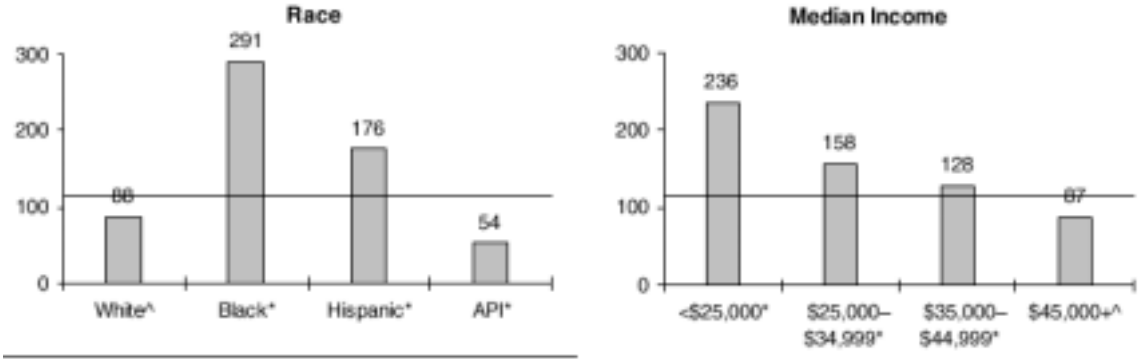


^ Indicates reference group.
*p<0.05 and relative rate >10% for comparison of group with reference group.
Key: NHOPI=Native Hawaiian or Other Pacific Islander; AI/AN=American Indian/Alaska Native; HS=High School
DSU=Data do not meet the criteria for statistical reliability, data quality, or confidentiality.
Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2000.

Blacks, Hispanics, and persons who live in poor neighborhoods are hospitalized more often for complications of diabetes, but Asians or Pacific Islanders are hospitalized less often. When diabetic management is chronically inadequate, diabetics may experience long-term complications and avoidable hospitalizations. Using State administrative data from the Healthcare Cost and Utilization Project, State Inpatient Databases (HCUP SID) in 16 States, significant disparities are noted by race, ethnicity, and socioeconomic status.

Overall, blacks and Hispanics have higher rates of hospitalization for diabetes and its complications. In contrast, Asians and Pacific Islanders have lower hospitalization rates. Using median income of ZIP Code of residence as a proxy of patients' socioeconomic position, lower income patients tend to have higher rates of hospitalization for diabetes and its complications (Figure 3) (Source: HCUP SID, 2000).

**Figure 3. Hospital admissions for long term complications of diabetes per 100,000 population,
(age-adjusted)
(Total 16 States = 117 per 100,000)**



^ Indicates reference group.
*p<0.05 and relative rate 10% for comparison of group with reference group.
Key: NHOPI=Native Hawaiian or Other Pacific Islander; AI/AN=American Indian/Alaska Native; HS=High School
DSU=Data do not meet the criteria for statistical reliability, data quality, or confidentiality.
Source: Agency for Healthcare Research and Quality, Healthcare Cost and Utilization Project, State Inpatient Database, 2000.

Diabetics are at high risk for developing foot ulcers and infections. When medical management of these conditions fails, amputation may be required. Overall, blacks have significantly higher rates of amputation for blacks (7.0 per 1000 diabetics) compared with whites (3.5 per 1000) (Source: NHDS, 1998-2000).

In summary, there are significant diabetes disparities in health care services and patient outcomes. Patients of lower socioeconomic position are less likely to receive recommended diabetic services and more likely to be hospitalized for diabetes and its complications. While blacks and Hispanics have higher diabetic complication rates, only small differences in the receipt of recommended diabetic services can be found. Further attempts to improve glycemic control for all patients may help to reduce the long-term adverse outcomes of diabetes.

Heart Disease

Key Findings:

- Many racial and ethnic minorities and persons of lower socioeconomic position are less likely to receive screening and treatment for cardiac risk factors.
- Exception: Blacks are **more** likely to report blood pressure monitoring.
- When hospitalized for acute myocardial infarction, Hispanics are less likely to receive optimal care.
- "Dual-eligible" individuals[i] who are hospitalized for cardiac conditions are less likely to receive quality care than other Medicare beneficiaries.

Why heart disease is important

- The leading cause of death for men and for women in the United States, heart disease was responsible for over 700,000 deaths in 2000. It is also the third leading cause of activity limitation. About 4.8 million Americans have heart failure, and 550,000 develop it each year.

- The economic cost of heart disease is estimated to be $214 billion, including $115 billion in health care expenditures.

- Two of the most common heart diseases are coronary heart disease and heart failure. About 12.6 million persons have coronary heart disease and over 1 million heart attacks occur each year.

- Over the last three decades, deaths due to coronary heart disease have fallen dramatically, in part due to declining rates of smoking and high cholesterol, two key cardiovascular risk factors. Heart disease risk can be modified through early detection and lifestyle changes.

Differences in heart disease among racial and ethnic groups have been observed. In particular:

- Heart disease deaths are higher among blacks and lower among Hispanics, Asians, and American Indians compared with non-Hispanic whites, although all groups have experienced declines in the past 15 years.

- Coronary heart disease is more prevalent among blacks compared with whites and the prevalence among blacks is rising while the prevalence among whites is falling. In addition, coronary heart disease mortality is higher among blacks compared with whites.[58]

[i] "Dual eligible" individuals are patients who use both Medicare and Medicaid coverage, a measure used as a proxy for low-income seniors

Racial, ethnic, and socioeconomic disparities in cardiovascular care have been extensively reviewed and documented.[59] Differences in recommendations for,[60] appropriateness of,[61, 62] and receipt of coronary revascularization procedures have been repeatedly demonstrated.[63, 64] In addition, differences in the management of acute myocardial infarction[65, 66] and unstable angina[67] and the diagnostic work-up of chest pain in the emergency room[68] have been demonstrated.

How the Nation is doing

NHQR Findings:
Blood pressure screening rates are high but cholesterol screening and smoking cessation rates are suboptimal. Rates of administration of aspirin to patients with acute myocardial infarction on hospital arrival are high, but rates of other recommended treatments for acute myocardial infarction are suboptimal.

NHDR Findings:
Given the evidence base and the quality measurement for heart disease, the NHDR examines numerous aspects of cardiovascular disease. Seven aspects of cardiovascular care considered in the NHDR are as follows (Tables 6 and 7):

- Screening for high blood pressure
- Screening for high cholesterol
- Counseling on risk factors
- Treatment of acute myocardial infarction
- Treatment of acute heart failure
- Management of hypertension
- Management of congestive heart failure

High blood pressure, high cholesterol, and smoking are three of the most important risk factors for heart disease that can potentially be modified by screening and treatment.

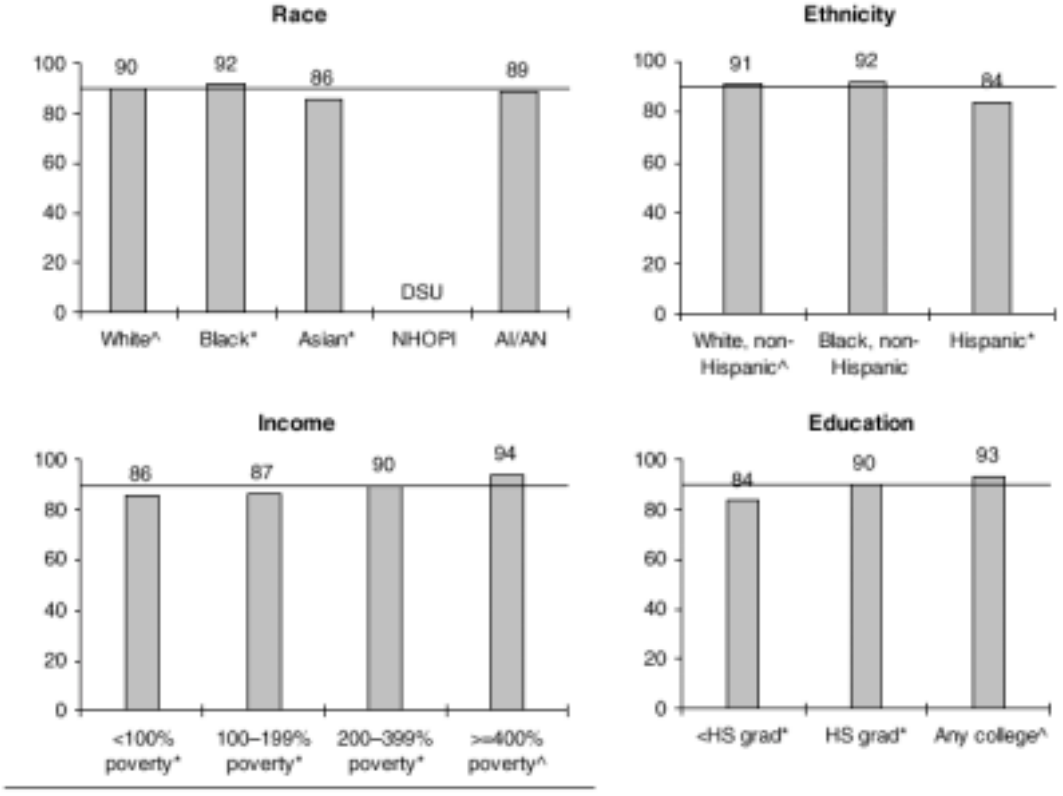
Asian, Hispanic, low income, and less educated adults are less likely than the general population to have their blood pressure monitored. Overall, 90% of adults have had their blood pressure measured within the preceding 2 years and can state whether their blood pressure was normal or high. The proportion of persons who have not had their blood pressure measured is lower among blacks (8%) and higher among APIs (14%) compared with whites (10%), and higher among Hispanics (16%) compared with non-Hispanic whites (9%). This measure is also higher among poor (14%), near poor (13%), and middle income (10%) persons compared with high income persons (6%), and among persons with less than a high school education (16%) and high school graduates (10%) compared with persons with any college education (7%)(Figure 4). (Source: NHIS, 1998). The percent of adults with hypertension whose blood pressure is under control is lower among persons with less than a high school education (20%) compared with persons with any college education (34%) (Source: NHANES, 1999-2000).

American Indian or Alaska Natives, Hispanics, low income, and less educated adults are less likely to have their cholesterol checked than the general population.

Screening for high cholesterol also demonstrates racial, ethnic, and socioeconomic disparity. The percent of adults who have had their blood cholesterol checked within the preceding 5 years is lower among AI/ANs (58%) compared with whites (67%) and among Hispanics (59%) compared with non-Hispanic whites (68%). This measure is also lower among poor (56%), near poor (60%), and middle income (67%) persons compared with high income persons (75%) and among persons with less than a high school education (58%) and high school graduates (69%) compared with persons with any college education (78%).(Figure 5) (Source: NHIS, 1998).

Among persons who had a check-up in the past year, the percentage of smokers receiving advice to quit smoking is lower among Hispanics (51%) compared with non-Hispanic whites (63%) (Source: MEPS, 2000). Moreover, while extensive disparity related to income or education is not noted, this measure is lower among the uninsured (49%) compared with persons with private health insurance (62%).

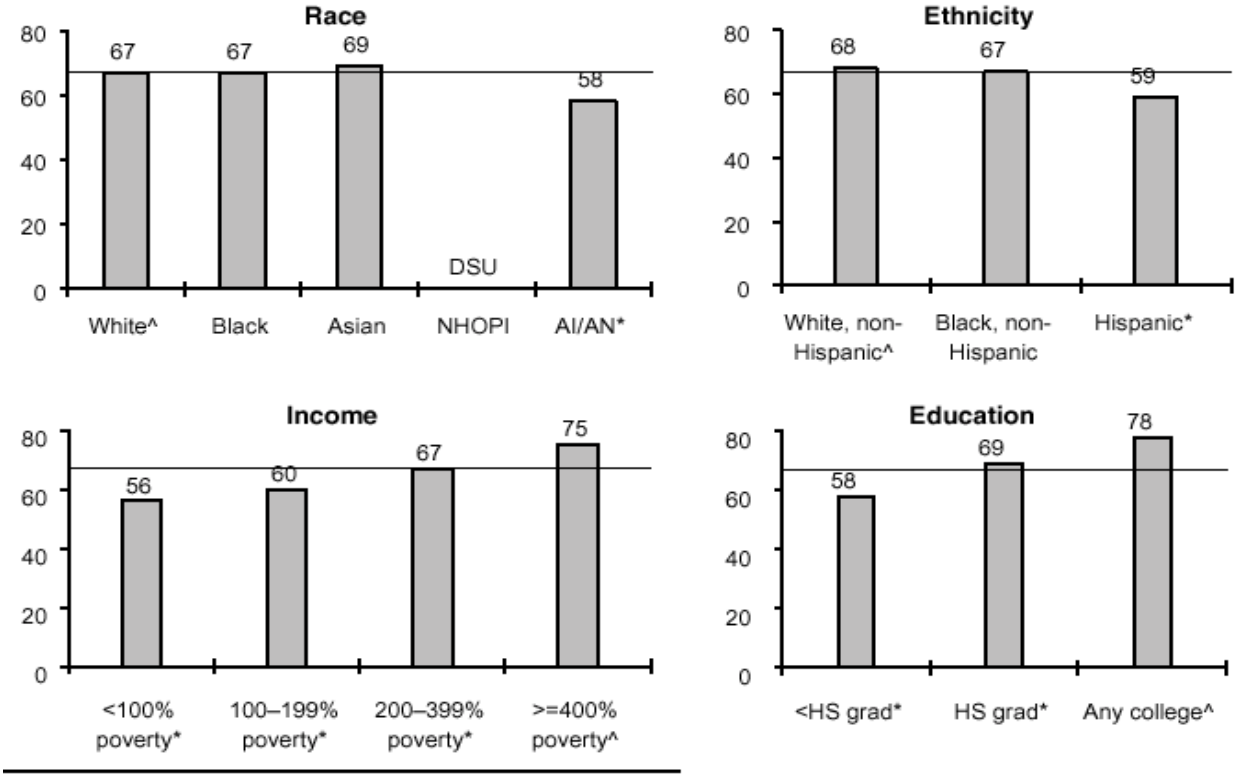
Figure 4. Percent of adults who have had their blood pressure measured within the preceding 2 years and can state whether their blood pressure was normal or high, (age-adjusted)
(U.S. total = 90%)



^ Indicates reference group.
*p<0.05 and relative rate >10% for comparison of group with reference group. Note that a relative rate .10% is achieved for the inverse of this measure, percent of adults who have not had their blood pressure measured within the preceding 2 years.
Key: NHOPI=Native Hawaiian or Other Pacific Islander; AI/AN=American Indian/Alaska Native; HS=High School
DSU=Data do not meet the criteria for statistical reliability, data quality, or confidentiality.
Source: National Center for Health Statistics, National Health Interview Survey, 1998.

Acute myocardial infarction and congestive heart failure are two serious cardiac conditions that demonstrate significant disparities in cardiac care. Overall, Hispanics tend to receive lower quality care for acute myocardial infarction compared with non-Hispanic whites. Since patient income and education information is not available, "dual eligible" status—using both Medicare and Medicaid coverage—is used as a proxy for socioeconomic position. "Dual-eligible" individuals who are hospitalized for acute myocardial infarction are less likely to receive aspirin and beta blockers within 24 hours compared with other Medicare beneficiaries. When hospitalized for acute heart failure, dual-eligibles are less likely to receive ACE inhibitors at discharge. (Source: Medicare Quality Improvement Organization program). Rates of hospital admissions for congestive heart failure are higher among blacks (5.5 per 1,000 population) compared with whites (2.5 per 1,000) (Source: NHDS, 2000).

Figure 5. Percent of adults who have had their blood cholesterol checked within the preceding 5 years, (age-adjusted) (U.S. total = 67%)



^ Indicates reference group.
*p<0.05 and relative rate >10% for comparison of group with reference group.
Key: NHOPI=Native Hawaiian or Other Pacific Islander; AI/AN=American Indian/Alaska Native; HS=High School
DSU=Data do not meet the criteria for statistical reliability, data quality, or confidentiality.
Source: National Center for Health Statistics, National Health Interview Survey. 1998.

In summary, many racial and ethnic minorities and persons of lower socioeconomic position are less likely to receive screening and treatment for cardiac risk factors. When hospitalized for acute myocardial infarction, Hispanics are less likely to receive optimal care. The combination of lower screening and effective treatment of risk factors, such as smoking among the uninsured, lend themselves to quality improvement initiatives that can potentially reduce heart disease disparities among populations at risk.

For the available NHDR measures, blacks suffer fewer cardiac disparities, especially when compared to other minority and socioeconomic groups. Blacks are more likely to receive blood pressure monitoring without any disparity in blood pressure management. The recognition of greater risk for significant cardiovascular disease among blacks may result in appropriately elevated rates of screening and treatment for risk factors. In addition, directed public education campaigns about cardiac risk factors and the importance of an involved patient may play an important role in the lower observed rate of cardiac disparities among blacks.

HIV/AIDS

Key Findings:

- Many racial and ethnic minorities and persons of lower socioeconomic position are more likely to die from HIV.
- Minorities also account for a disproportionate share of new AIDS cases.

Why HIV/AIDS is important

Human immunodeficiency virus (HIV) infection and its late-stage manifestation, acquired immune deficiency syndrome (AIDS), form one of the most devastating global infection disease pandemics in history.

- Worldwide, over 42 million persons are infected with the virus, and 40 million persons have died since the disease was first identified in 1981.[69] In 2002, over 5 million persons around the globe were infected with the virus and more than 3 million persons died, including 610,000 children.[70]
- Estimates indicate that, in the United States alone, between 850,000 and 950,000 individuals are infected, a quarter of whom do not yet know that they carry the disease.[71] More than 450,000 Americans have died from the disease since its discovery, and over 14,000 persons died in 2000.[72] Each year, about 40,000 persons acquire the infection, half of whom are under age 25.[73, 74]

Fortunately, great strides have been made in recent years in the management of this disease. Educational campaigns to prevent spread of the virus have been launched, treatments to control the virus and its associated opportunistic infections and cancers have been produced, and vaccines are under development.[75, 76, 77, 78]

HIV incidence and death rates vary by race and ethnicity.

- While blacks make up about 12 percent of the U.S. population, they accounted for 50% of the new HIV cases reported in the United States in 2001.[79]
- AIDS is the leading cause of death among black women 25 to 34 and black men 35 to 44.[80] Hispanics also have higher AIDS incidence rates compared with whites.[81]

Racial, ethnic, and socioeconomic disparities in quality care for HIV/AIDS have been documented in, for example, receipt of antiretroviral therapy and prophylactic therapy to prevent *Pneumocystis carinii* pneumonia (PCP),[82] receipt of highly active antiretroviral therapy,[83] and management of PCP.[84]

How the Nation is doing

NHQR Findings:
The NHQR found decreases in both new AIDS cases and in AIDS mortality. (See the NHQR for details.)

NHDR Findings:
This section examines two aspects of the quality of HIV/AIDS health care (Tables 8 and 9):

- AIDS prevention
- Management of HIV/AIDS

(Additional measures related to receipt of HIV care can be found in the chapter on Access to Health Care.)

While the overall rate of new AIDS cases is decreasing, new AIDS cases are reported at a higher rate among non-Hispanic blacks (75 per 100,000 population), Hispanics (26 per 100,000), and AI/ANs (12 per 100,000) compared with non-Hispanic whites (7 per 100,000). The new AIDS infection rate is even lower among APIs (4 per 100,000) (Source: CDC HIV/AIDS Surveillance System).

Effective treatments cannot cure HIV disease, but they can reduce or delay mortality from HIV-infection. Death rates due to HIV infection are higher among blacks (24 per 100,000 population) compared with whites (3 per 100,000); death rates are also higher among Hispanics (7 per 100,000) compared with non-Hispanic whites (2 per 100,000). There are a relationship between HIV morality and education; persons with less than a high school education (20 per 100,000) and high school graduates (13 per 100,000) had higher HIV death rates compared to persons with any college education (4 per 100,000) (Source: NVSS-M, 2000).

In summary, minorities account for a disproportionate share of new AIDS cases. In addition, many racial and ethnic minorities and persons of lower socioeconomic position are more likely to die from AIDS. However, given the complex relationship between HIV infection and mortality, factors such as lifestyle and patient preferences may play a role. Additional measures of HIV-related quality are needed to better understand health care disparities related to HIV treatment and outcomes.

Maternal and Child Health

Key Findings:

- Many racial and ethnic minorities and persons of lower socioeconomic position are less likely to receive timely prenatal care, are more likely to have low birthweight babies, and have higher rates of infant and maternal mortality.

- Many racial and ethnic minorities and persons of lower socioeconomic position are less likely to receive childhood immunizations.

Why maternal and child health is important

The health and care of mothers and children is of critical importance to maximize the health of the next generation. Childbirth and reproductive care are the most common reasons for women of childbearing age to use health care. With more than 11,000 births each day in the United States, childbirth is the most common reason for hospital admission.[85]

- In 2001, 11.9% of infants were born preterm, 7.7% were born with low birthweight, including 1.4% with very low birthweight, and 1.4 percent had low 5-minute Apgar scores.[1] Over time, rates of preterm birth and low and very low birthweight have increased, although rates of low Apgar scores and infant mortality have decreased.[86]

- Comprehensive prenatal care can prevent complications of pregnancy and reduce neonatal mortality. Given that birth outcomes have effects that accrue over a lifetime, prenatal care is highly cost-effective.[87]

There are significant racial and ethnic differences in birth rates. For example:

- Non-Hispanic blacks, Hispanics, and APIs have higher birth rates than non-Hispanic whites. Similarly, non-Hispanic blacks, Hispanics, and American Indians have higher birth rates among teenagers than non-Hispanic whites.

- Black, American Indian, and Hawaiian mothers are more likely to have preterm, low birthweight, or low Apgar infants compared to white mothers. Similarly, Hispanic mothers are more likely to have preterm infants but less likely to have low birthweight or low Apgar infants compared with non-Hispanic white mothers.[88]

- During their first year of life, black infants are more likely to die than non-Hispanic white infants.[89]

[1] Apgar scores are routinely performed to evaluate the general physical condition of newborns. Scores range from 0 to 10. Scores of 7 or higher indicate good neonate physical condition; scores under 7 are considered low.

Racial, ethnic, and socioeconomic disparities in maternal and child health care, particularly with respect to maternal care processes (e.g., prenatal care counseling),[90] use of prenatal care technologies,[91] modes of delivery[92, 93] and maternal care outcomes (e.g., birthweight and fetal and neonatal mortality)[94] have been extensively documented. Similarly, minority children and children of lower socioeconomic position often receive different care than white children and more affluent children.[95, 96, 97]

How the Nation is doing

NHQR Findings:
The NHQR found improvements in all maternal and child health measures over time, including maternity care, immunizations and treatment of pediatric gastroenteritis. See NHQR for details.

NHDR Findings:
Five aspects of the quality of maternal and child health care are included in this section (Tables 10 and 11):

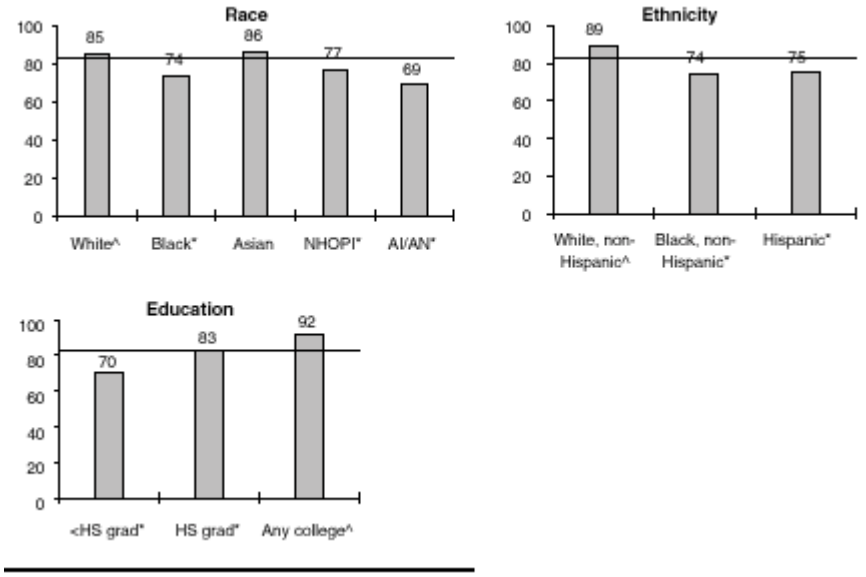
- Maternity care
- Childhood immunization
- Adolescent immunization
- Childhood dental care
- Treatment of pediatric gastroenteritis

(General measures of access to care, receipt of care and quality of care as they are applied to children can be found in Chapter 5.)

Many racial and ethnic minorities and less educated women are less likely than the general population to receive timely prenatal care. Optimal prenatal care should reduce rates of low birthweight and of infant and maternal death. About 83% of women start prenatal care in the first trimester while 17% do not. There are significantly lower rates of prenatal care among blacks (26%), Native Hawaiians or Other Pacific Islanders (NHOPI) (23%), and AI/ANs (31%), compared to whites (15%). Hispanics (25%) are also more likely than non-Hispanic whites (11%) to lack prenatal care during the first trimester. Similarly, pregnant women with less than a high school education (30%) and those who completed high school (17%) are more likely to lack prenatal care than women with any college education (8%). (Figure 6) (NVSS-Natality, 2000)

Babies born to black, NHOPI, AIAN, and less educated mothers are more likely to die at birth. However, babies born to Asian mothers are less likely than those born to white mothers to die at birth. Racial and ethnic minorities are also more likely to have low birthweight babies and infants who die in the first year of life. Less educated women experience similar patterns. Although Hispanic women are more likely to die from obstetrical complications, Hispanic infants do not have higher mortality rates. Overall, infant mortality rates are higher for blacks (13.5 deaths per 1000 live births), NHOPIs (8.2 per 1000), and AI/ANs (8.3 per 1000) and lower for Asians (4.5 per 1000) compared with whites (5.7 per 1000) (Figure 7) (NVSS-Mortality, 2000). These patterns typically persist after stratification for infant birth weight.

Figure 6. Percent of pregnant women receiving prenatal care in first trimester (U.S. total = 83%)



^ Indicates reference group.
*Relative rate >10% for comparison of group with reference group. Note that a relative rate >10% is achieved for the inverse of this measure, percent of pregnant women not receiving prenatal care in the first trimester.
Key: NHOPI=Native Hawaiian or Other Pacific Islander; AI/AN=American Indian/Alaska Native; HS=High School
DSU=Data do not meet the criteria for statistical reliability, data quality, or confidentiality.
Source: National Center for Health Statistics, National Vital Statistics System-Natality, 2000.

Black and low income children are less likely to receive all recommended vaccines.

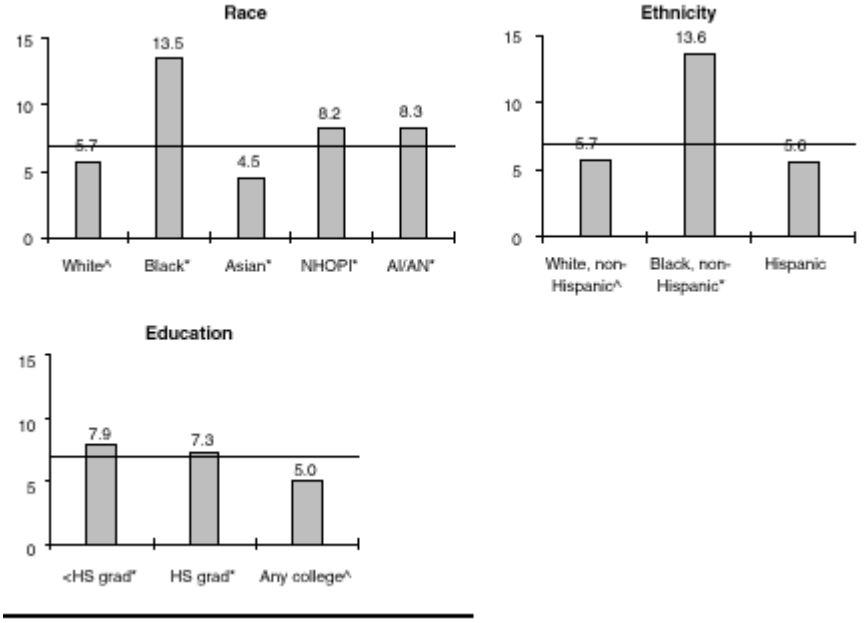
Childhood and adolescent vaccination both protect its recipients from illness and disability and others in the community who cannot be vaccinated, such as small children and persons who are immunosuppressed. Vaccines routinely recommended for children tend to have net cost savings ranging from $24 saved for ever dollar spent on the diphtheria, tetanus, pertussis vaccine to $2 for the *Haemophilus influenzae* type b vaccine.[98]

Immunization of children and adolescents is an important means of reducing mortality and morbidity in these populations. Blacks are less likely to receive childhood immunizations compared with whites, and lower income children are less likely to receive immunizations compared with more affluent children.

For example, receipt of all recommended vaccinations is achieved by 74% of children ages 19 to 35 months, while 26% do not attain this goal. Black children are more likely to miss all recommended vaccinations (32%), compared with white children (25%). Similarly, children who are poor (32%), near poor (29%), and middle income (25%), compared with children from high income families (21%), do not receive all recommended vaccinations. (Figure 8) (National Immunization Survey, 2001).

Dental care for children is important to develop healthy dental habits. Among children, blacks (32%) are less likely than whites (50%), and Hispanics (27%) are less likely than non-Hispanic whites (55%) to visit a dentist. Similarly, fewer poor (32%), near poor (29%), and middle income (51%) children, compared with high income children (65%), and fewer uninsured children (22%), compared with privately insured children (54%), visit a dentist (MEPS, 1999).

Figure 7. Infant mortality per 1,000 live births, all births (U.S. total = 6.9)



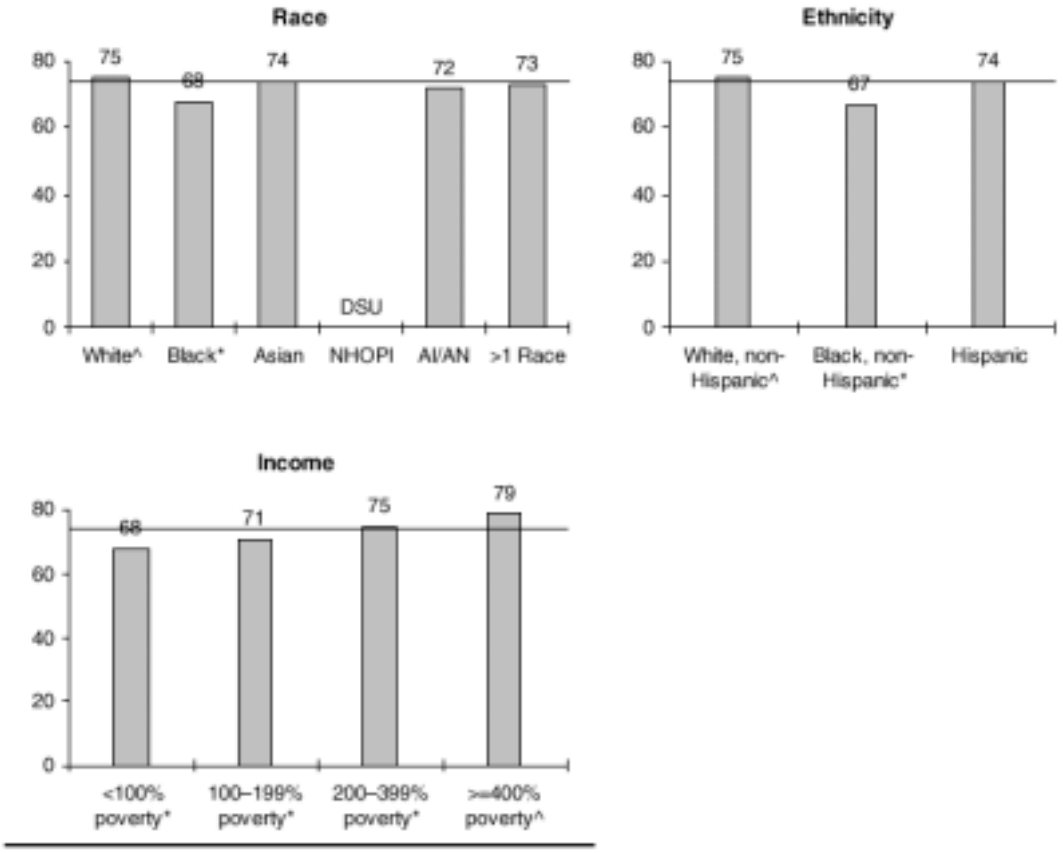
^ Indicates reference group.
*Relative rate >10% for comparison of group with reference group.
Key: NHOPI=Native Hawaiian or Other Pacific Islander; AI/AN=American Indian/Alaska Native; HS=High School
DSU=Data do not meet the criteria for statistical reliability, data quality, or confidentiality.
Source: National Center for Health Statistics, National Vital Statistics System-Mortality, 2000.

Another measure of the quality of care for children is the rate of avoidable hospitalizations. For example, many hospitalizations for pediatric gastroenteritis should be avoidable with effective primary care. Rates of hospitalization for pediatric gastroenteritis are higher among Hispanic children (133 per 100,000 population) and lower among API children (47 per 100,000) compared with white children (107 per 100,000). Because information on patient income and education is not available, the median income of by patient ZIP Code is used as a proxy of socioeconomic position. Overall, hospitalization for gastroenteritis are higher among children who live in ZIP Codes with lower median incomes; incomes <$25,000(172 per 100,000 population), incomes of $25,000-$34,999 (157 per 100,000), and incomes of $35,000-$44,999 (124 per 100,000), compared with children who live in ZIP Codes with median incomes of $45,000 and over (86 per 100,000) (HCUP SID 16-State database, 2000).

In summary, there are significant disparities in maternal and child health. Overall, minorities and women of lower socioeconomic position are less likely to have timely prenatal care. This lower rate of prenatal care is coupled with a higher rate of low birthweight babies and infant mortality.

However, birth outcomes may be affected by factors other than prenatal care, including maternal health, lifestyle, and patient preferences. Finally, many racial and ethnic minorities and persons of lower socioeconomic position are less likely to receive childhood immunizations.

Figure 8. Percent of children 19-35 months who receive all recommended vaccines (U.S. total = 74%)



^ Indicates reference group.
*p<0.05 and relative rate >10% for comparison of group with reference group. Note that a relative rate >10% is achieved for the inverse of this measure, percent of children 19-35 months who have not received all recommended vaccines.
Key: NHOPI=Native Hawaiian or Other Pacific Islander; AI/AN=American Indian/Alaska Native; HS=High School
DSU=Data do not meet the criteria for statistical reliability, data quality, or confidentiality.
Source: National Center for Health Statistics, National Immunization Survey, 2001.

Mental Health

Key Findings:
- Rates of suicide are lower among minority groups.
- Suicide is higher among high school dropouts and high school graduates compared with persons with any college education.

Why mental health is important

Mental illness is a category of diseases and problems which include major and minor depression, schizophrenia, substance abuse, bipolar disorder, Alzheimer's disease, and other disorders of the brain/mind. The personal and social costs associated with inadequate mental health care are staggering:

- The direct costs of mental disorders totaled $69 billion in 1996, while lost productivity and premature death accounted for an additional $75 billion. Mental disorders are the second leading cause of disability in established market economies such as the United States, accounting for over 15% of disability-adjusted life-years.

- Almost 15 million persons aged 18 and over, or 7% of the population, have a serious mental illness that substantially interferes with or limits one or more major life activities.[99]

- Depressive disorders account for about one-third of mental disorders. In any year, about 6.5% of women and 3.3% of men will have major depression. Major depression accounts for 6.8% of disability-adjusted life years and is associated with high rates of suicide.[100]

Although treatments of mental disorders are highly effective, only a quarter of persons with mental disorders and 40% of persons with serious mental illness seek help from the health care system. When patients do interact with health care providers, disorders such as depression often go undiagnosed.

Racial, ethnic, and socioeconomic disparities in mental health care have been documented in use of psychiatric medications[101] and of psychiatric outpatient,[102] emergency,[103] and inpatient services.[104]

How the Nation is doing

NHQR Findings:
Pharmacological treatment of depression has improved over time although opportunities for improvement remain. The NHQR also notes that while the suicide rate for adults has been relatively stable over time, the suicide rate for young adults has nearly tripled over the past four decades. (See the NHQR for details).

NHDR Findings:
Treatment of depression is examined in this section (Tables 12 and 13). (Additional measures related to access to and receipt of mental health care and substance abuse treatment can be found in the chapter on Access and Receipt of Care.)

There is not yet broad agreement within the mental health field on a core set of national mental health quality of care performance measures. But rather than omitting mental illness in its first report entirely, the NHQR turned to a reliable source of performance information on the quality of care for depression provided to managed care enrollees: the Health Plan Employer Data and Information Set (HEDIS®) measures. Unfortunately, racial, ethnic, and socioeconomic comparisons cannot be performed using HEDIS® data. Hence, the issue of disparities in pharmacological treatment of depression is not addressed in this section.

Effective treatment of depression may reduce rates of suicide. Suicide rates are lower among blacks (5.6 per 100,000 population) and APIs (5.8 per 100,000), than whites (11.5 per 100,000), and lower among Hispanics (6.1 per 100,000) than non-Hispanic whites (12.1 per 100,000). Rates of suicide death are higher among high school dropouts (18.4 per 100,000 population) and high school graduates (18.8 per 100,000) compared with persons with any college education (9.3 per 100,000). However, suicide may be influenced by factors other than mental health care. Further measures of mental health disparities by race, ethnicity, and socioeconomic position are clearly required (Source: NVSS-M).

Respiratory Diseases

Key Findings:

- Black children have much higher hospitalization rates for asthma than white children.
- Many racial and ethnic minorities and individuals of lower socioeconomic status are less likely to receive recommended immunizations for influenza and pneumococcal disease.
- When racial and ethnic minorities are hospitalized for pneumonia, differences in quality of care received are observed.

Why respiratory diseases are important

Respiratory diseases cause activity limitation in 2.6 million persons. Annual costs of respiratory diseases exceed $116 billion, including $65 billion in health care expenditures.[58] Major respiratory diseases include:

- Chronic lower respiratory disease, such as chronic obstructive pulmonary disease (COPD) and asthma. COPD is the fourth leading cause of death; and

- Acute lower respiratory infection, such as influenza and pneumonia, which together are the seventh leading cause of death.[105]

Asthma affects about 15 million persons, and prevalence and mortality are increasing.[106] Each year, about 11 million persons experience asthma attacks and 5,500 persons die of the disease. Pneumonia is a leading cause of hospitalization among children and the elderly, and treatment costs in the United States exceed $9.7 billion.[107]

While not generally considered a respiratory disease, tuberculosis often has pulmonary manifestations. While progress toward elimination of tuberculosis was delayed by the resurgence of the disease between 1985 and 1992 and by emergence of drug-resistant strains,[108] rates of new tuberculosis cases continue to fall.[109]

Many respiratory diseases can be effectively prevented and managed. Vaccination of the elderly and high-risk adults is a highly effective strategy for reducing illness and death associated with pneumococcal disease and influenza. Consensus guidelines on the management of asthma are widely accepted and disseminated.[110] Anti-tuberculous medications are highly effective when treatment is adhered to and completed.

There are racial and socioeconomic differences in respiratory disease prevalence. For example, asthma is more prevalent among minorities and low income persons,[111] and asthma attack rates and mortality are higher among blacks compared with whites. Hospitalization and emergency room visits for asthma continue to rise among minority populations.[112] Tuberculosis is highly concentrated in two populations: foreign-born persons and U.S.-born non-Hispanic blacks. Non-Hispanic blacks account for almost half of all cases among U.S.-born persons. In addition, there

are differences in influenza vaccination among Medicare beneficiaries[113] and in management of asthma among managed care enrollees.[114, 115]

How the Nation is doing

NHQR Findings:
The NHQR found decreases in hospitalization rates for asthma between 1994 and 2000, but noted continued opportunities for improvement in asthma management. The NHQR found no change in the rate of inappropriate antibiotic prescriptions for the common cold between 1997-1998 and 1999-2000. (See the NHQR for details).

NHDR Findings:
This section examines six aspects of the quality of health care for respiratory diseases (Tables 14 and 15):

- Influenza immunization
- Pneumococcal immunization
- Treatment of pneumonia
- Treatment of upper respiratory infection
- Management of asthma
- Treatment of tuberculosis

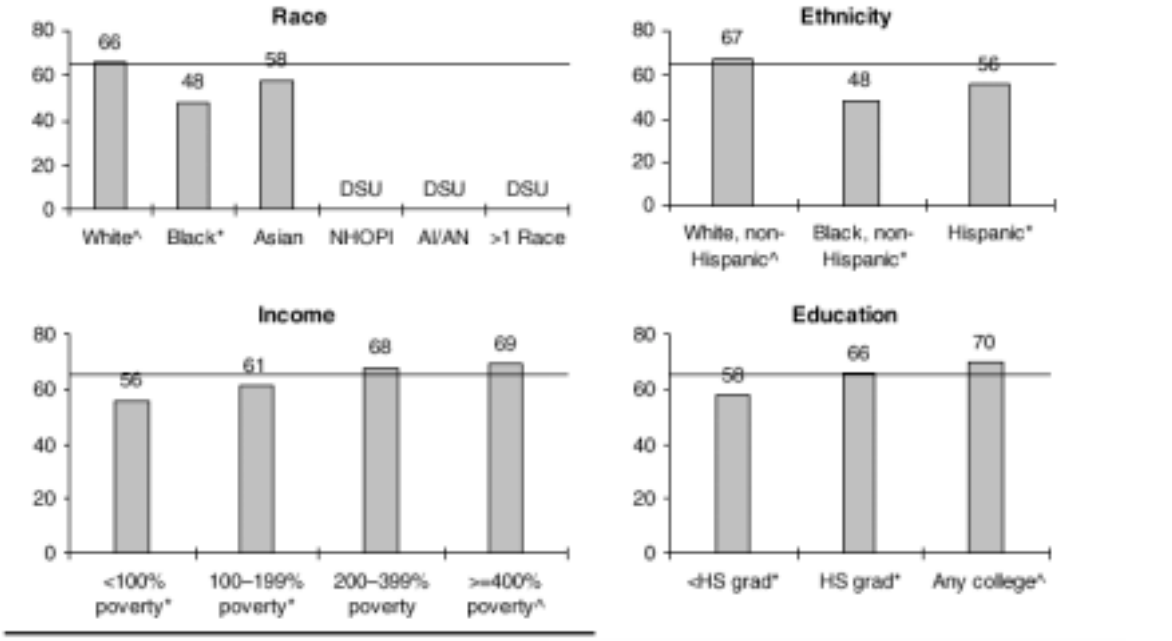
Black, Hispanic, low income, and less educated elders are less likely to receive flu shots.
Sixty-five percent of persons aged 65 and above report that they received an influenza vaccine (Figure 9) (NHIS, 2000); 35% still do not receive this vaccine. Blacks (52%) are more likely than whites (34%) to fail to receive the vaccination. Those of low socioeconomic status are also less likely to receive immunization. Specifically, the poor (44%) and near poor (39%) are more likely than their high income counterparts (31%) to forego flu shots. Similarly, those with less than a high school education (42%) and high school graduates (34%) are more likely than those with any college education (30%) to miss the vaccine.

Among the elderly, Hispanics (44%) are more likely to go without an influenza vaccine than non-Hispanic whites (33%). Similarly, among persons 65 and over, blacks, Hispanics, and persons of lower socioeconomic position are less likely to receive pneumococcal vaccination. Among high risk persons aged 18-64, Hispanics (10%) are less likely to report pneumococcal vaccination than non-Hispanic whites (16%).

Many respiratory hospitalizations are avoidable with immunization and effective primary care. APIs and Hispanics have lower rates of hospitalization for influenza compared with non-Hispanic whites. Again, information on patient income and education is not available. Using median income of patient's ZIP Code as a proxy of socioeconomic position, patients who live in lower income areas have higher rates of hospitalization for influenza compared with residents of higher income ZIP Codes (HCUP SID 16-State database, 2000). Hospitalization rates among black children (60 per 10,000 population) and adults (21 per 10,000) tend to be higher than rates

among white children (17 per 10,000) and adults (8 per 10,000) (NHDS, 2000). Information on patient income or education is not available.

Figure 9. Percent of persons 65 and over who report receiving influenza vaccination in the past year (U.S. total = 65%)



^ Indicates reference group.
*p<0.05 and relative rate >10% for comparison of group with reference group. Note that relative rate >10% is achieved for the inverse of this measure, percent of persons 65 and over who do not report receiving influenza vaccination in the past year.
Key: NHOPI=Native Hawaiian or Other Pacific Islander; AI/AN=American Indian/Alaska Native; HS=High School
DSU=Data do not meet the criteria for statistical reliability, data quality, or confidentiality.
Source: National Center for Health Statistics, National Health Interview Survey, 2000.

Though many cases of pneumonia can be prevented, there are important measures of the quality of care provided to patients hospitalized with pneumonia. Among Medicare beneficiaries, non-Hispanic blacks and Hispanics tend to receive lower quality pneumonia treatment and AI/ANs tend to receive higher quality care compared with non-Hispanic whites. Because information on patient income and education is unavailable, the NHDR uses both Medicare and Medicaid coverage as a proxy for low-income seniors. Such "dual-eligibles" who are hospitalized for pneumonia are less likely to receive influenza and pneumococcal screening or vaccination than other Medicare beneficiaries. (Source: Medicare Quality Improvement Organization program)

In summary, many racial and ethnic minorities and persons of lower socioeconomic position persons are less likely to receive recommended immunizations for influenza and pneumococcus. In some instances, these lower rates of vaccination are associated with higher rates of potentially avoidable respiratory admissions. Once hospitalized, some ethnic and racial minorities, as well as lower income patients, suffer worse quality of care for pneumonia. These differential rates of vaccination and hospitalization present opportunities for provider-based and community-based interventions to reduce disparities.

Long Term Care

Key Findings:

- The percent of residents in physical restraints is higher among Hispanics and APIs compared with non-Hispanic whites.
- The percent of residents with pressure sores is higher among non-Hispanic blacks and lower among APIs compared with non-Hispanic whites.

Why long term care is important

Long term care is the provision of personal, social, and medical services to persons who have functional or cognitive limitations in their ability to perform self-care and other activities necessary to live independently. As the number of elderly Americans increases from 35 million in 2000 to an estimated 71 million in 2030,[116] the need for long-term care is expected to increase. Long term care includes the provision of services at home, in the community, and in special facilities.

- Home health care is available for those who can be managed at home. In 1996, about 12,000 home health care agencies provided care to 7.8 million persons, about two-thirds of whom were aged 65 and above.[117]

- Nursing homes are often a better option for those with serious disabilities that require 24-hour care or whose needs can be better met in a special facility. More than half of all nursing home residents are aged 85 and above. Nursing home care costs on average, $56,000 per person per year, and expenditures total almost $80 billion, about half of which is paid by Medicaid and Medicare.[118] Approximately 70% of nursing home residents are supported in part by Medicaid.[118]

Use of home health care and of nursing home care has declined in recent years.[120] CMS data indicate that there are currently 1.4 million nursing home residents, down from 1.6 million in 1999.[119] At the same time, because growth in the elderly population over 75 has outpaced growth in the supply of nursing home beds, nursing homes are caring for older patients with more functional limitations.[120, 121]

Studies indicate that racial, ethnic, and socioeconomic disparities in nursing home care exist,[122] particularly with respect to differences in the management of pain[123] and the receipt of rehabilitative services.[124] Concerns about nursing home quality, as well as lawsuits against nursing homes, are on the rise.[125]

How the Nation is doing

NHQR Findings:
The NHQR found that while use of restraints in nursing homes may have declined, many opportunities to improve the quality of nursing home care exist. (See the NHQR for details).

NHDR Findings:
Nursing facility care is examined in this section (Table 16). Additional measures related to receipt of nursing home, home health, and hospice care can be found in the Chapter 4. (Measures related to palliative (e.g., hospice) care for cancer patients can be found in the Cancer section of this chapter, and measures related to immunizations received by nursing home residents can be found in the Respiratory Diseases section of this chapter.)

Racial and ethnic minorities have more favorable quality of care on some measures and less favorable care on others. For example, the percent of nursing home residents who report pain is lower among non-Hispanic blacks (7%), Hispanics (7%), and APIs (5%) than among non-Hispanic whites (10%). However, the percent of residents in physical restraints is higher among Hispanics (12%) and APIs (12%) than among non-Hispanic whites (8%). The percent of residents with pressure sores is higher among non-Hispanic blacks (10%) and lower among APIs (7%) compared with non-Hispanic whites (8%). Overall, there are opportunities for improvement in nursing homes, though few examples of significant disparities. (Source: CMS's Nursing Home Resident Profile Table).

In summary, patient race, ethnicity, and socioeconomic status are important indicators of the effectiveness of health care.

Patient Safety

Key Findings:

- Racial and ethnic minorities have higher rates of hospital-acquired infections.
- Racial and ethnic minorities have higher rates of some complications of care, such as respiratory failure after surgery, and lower rates of other complications, such as hip fracture after surgery.
- Many racial and ethnic minorities have lower rates of injury related to labor and delivery and lower rates of inpatient death when hospitalized for conditions that should not lead to death.
- Many racial and ethnic minorities as well as the uninsured are more likely to be asked by their provider about medications and treatments from other doctors.
- For all findings, patient race, ethnicity, and socioeconomic position are associated with an increased risk of poor care.

Why patient safety is important

The prime directive of medical care is to do no harm, but the Institute of Medicine report, *To Err is Human*, estimated that 44,000 to 98,000 Americans die each year as a result of medical errors, making it the eighth leading cause of death.[126] This report also estimates costs attributable to medical errors total $29 billion annually.

Adverse drug reactions occur in 6.7% of hospitalized patients[127] and are rising.[128] Adverse drug events that are preventable occurred in about 2% of admissions to Utah hospitals[129] and Boston teaching hospitals;[130] 20% of these events were life-threatening. Among Medicare beneficiaries in an ambulatory setting, the overall rate of adverse drug events was 50 per 1,000 person years; over 40% of serious, life-threatening, or fatal events were deemed preventable.[131]

Relatively little is known about disparities in medical error. Blacks appear to be at greater risk for serious adverse events related to digitalis therapy[132] and pharmacologic treatment of diabetes.[133] Language barriers may increase the risk of drug complication among outpatients.[134] However, among hospitalized children, those who live in low income ZIP Codes have lower rates of medical errors compared with children from high income ZIP Codes.[135] Uninsured patients are more likely to suffer negligent medical injury in hospitals.[136]

How the Nation is doing

NHQR Findings:
The NHQR found that rates of many postoperative complications increased from 1994 to 2000. (See the NHQR for details.)

NHDR Findings:
Six aspects of patient safety are included in this section (Tables 17 and 18):

- Complications of care
- Nosocomial infections
- Injuries or adverse events due to technical errors
- Birth-related trauma
- Potentially avoidable death
- Medication safety

Because information on patient income and education are unavailable, the NHDR uses the median income of the patient's ZIP Code as a proxy of socioeconomic position. These inpatient measures are part of the Patient Safety Indicators developed by AHRQ (HCUP SID 16 State database).[137]

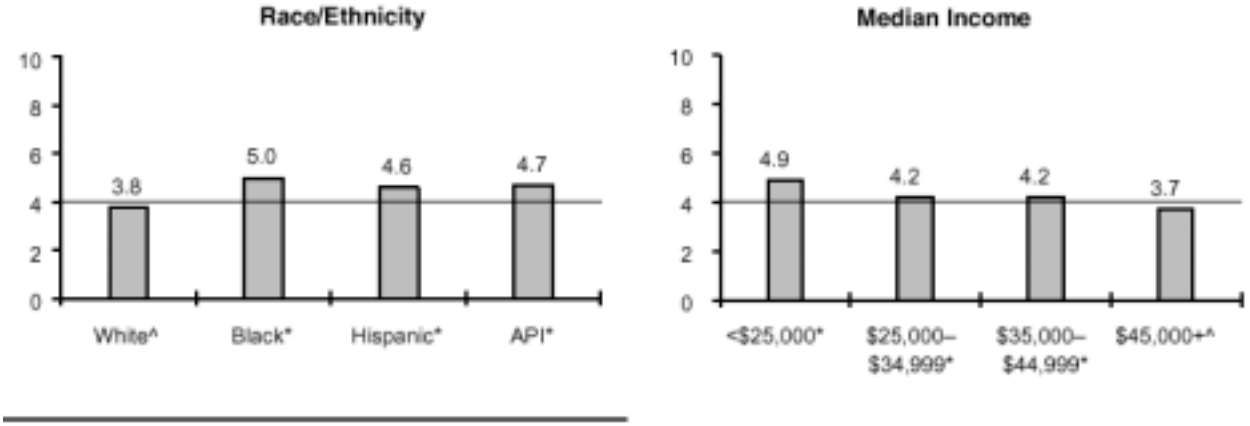
Racial and ethnic minorities and the poor have higher rates of severe breathing problems after surgery. Minorities and the poor also have higher rates of some complications of care: postoperative hemorrhage or hematoma with surgical drainage or evacuation postoperative respiratory failure, postoperative physiologic/metabolic derangement, and decubitus ulcers. For example, rates of postoperative respiratory failure are higher among persons who live in poor areas[1] (4.9 per 1,000 relevant discharges), near-poor areas[2] (4.2 per 1,000), and medium-income areas[3] (4.2 per 1,000), compared with high-income area[4] residents persons who live in (3.7 per 1,000) (Figure 10) (HCUP SID 16 state database, 2000).

In contrast, rates of complications of anesthesia are lower among non-Hispanic blacks (0.57 per 1000 relevant discharges) and Hispanics (0.53 per 1,000) compared with non-Hispanic whites (0.74 per 1,000) and residents of poor areas (0.56 per 1,000 relevant discharges) compared with residents of high-income areas (0.71 per 1,000).

Racial and ethnic minorities and the low-income have higher rates of severe infection after surgery. Minorities and the poor have higher rates of nosocomial infections. For example, rates of postoperative septicemia[5] are higher among non-Hispanic blacks (17.3 per 1,000 relevant discharges), Hispanics (14.9 per 1,000), and APIs (14.5 per 1,000) compared with non-Hispanic whites (10.9 per 1,000). Postoperative septicemia rates are also higher among residents of poor areas (15.3 per 1,000 relevant discharges), near-poor areas (13.0 per 1,000), compared with high-income areas (11.3 per 1,000) (Figure 11) (HCUP SID 16-State database, 2000).

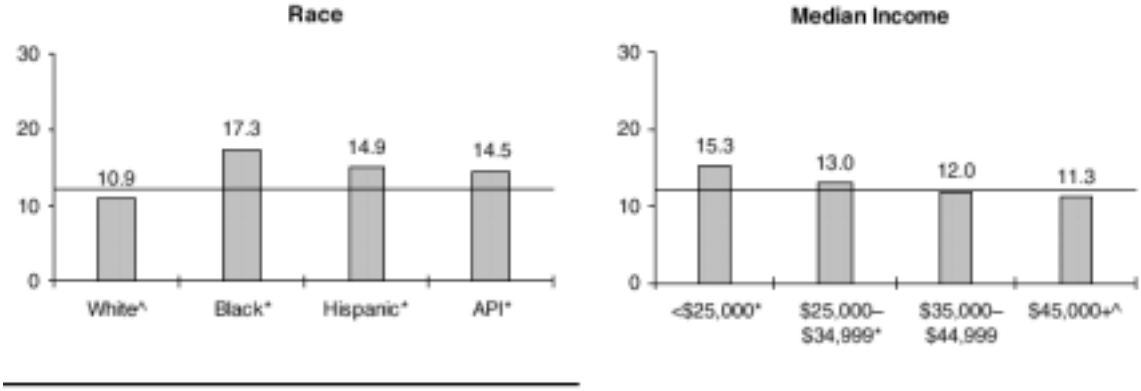
[1] "Poor areas" are defined as having ZIP Codes with median incomes of under $25,000.
[2] "Near-poor areas" are defined as having ZIP Codes with median incomes of $25,000-$34,999.
[3] "Medium income areas" are defined as having ZIP Codes with median incomes of $35,000-$44,999.
[4] "High-income areas" are defined as having ZIP Codes with median incomes of $45,000 and higher.
[5] Bacterial infection with invasion of the bloodstream and systemic illness.

Figure 10. Postoperative respiratory failure per 1,000 elective surgical discharges (Total 16 States = 4.0)



^ Indicates reference group.
*p<0.05 and relative rate >10% for comparison of group with reference group.
Key: NHOPI=Native Hawaiian or Other Pacific Islander; AI/AN=American Indian/Alaska Native; HS=High School
DSU=Data do not meet the criteria for statistical reliability, data quality, or confidentiality.
Source: Agency for Healthcare Research and Quality, Healthcare Cost and Utilization Project, State Inpatient Database (16 States), 2000.

Figure 11. Postoperative septicemia per 1,000 elective surgical discharges of 4+ days (Total, 16 States = 12.1)



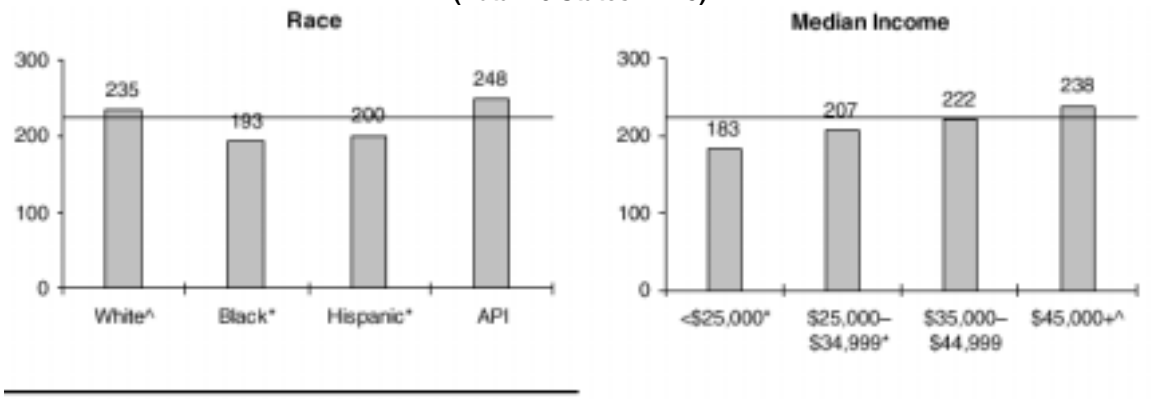
^ Indicates reference group.
*p<0.05 and relative rate >10% for comparison of group with reference group.
Key: NHOPI=Native Hawaiian or Other Pacific Islander; AI/AN=American Indian/Alaska Native; HS=High School
DSU=Data do not meet the criteria for statistical reliability, data quality, or confidentiality.
Source: Agency for Healthcare Research and Quality, Healthcare Cost and Utilization Project, State Inpatient Database (16-State), 2000.

Differences in rates of injuries and adverse events due to technical errors tend to be less pronounced than disparities in other aspects of patient safety. However, Hispanics and residents of poor areas have lower rates of some of these measures. For example, rates of iatrogenic pneumothorax are lower among Hispanics (0.61 per 1,000) compared with non-Hispanic whites (0.75 per 1,000) and residents of poor areas (0.67 per 1,000 discharges) compared with residents of high-income areas (0.75 per 1,000) (HCUP SID 16-State database, 2000).

Blacks, Hispanics, and women who live in poor neighborhoods have lower rates of trauma associated with deliveries. Minorities and residents of lower income ZIP Codes also have lower

rates of birth-related trauma. For example, rates of obstetric trauma during instrument-assisted deliveries, primarily serious lacerations, are lower among non-Hispanic blacks (193 per 1,000 instrument-assisted deliveries) and Hispanics (200 per 1,000) compared with non-Hispanic whites (235 per 1,000) and lower among residents of poor areas (183 per 1,000 instrument-assisted deliveries) and near-poor areas (207 per 1,000), compared with residents of high-income areas (238 per 1,000) (Figure 12) (HCUP SID 16 State database, 2000). It should be noted that since episiotomies increase the risk for "obstetric trauma," these procedures may account for the differential rates.[138]

Figure 12. Obstetric trauma per 1,000 instrument-assisted deliveries (Total 16 States = 225)

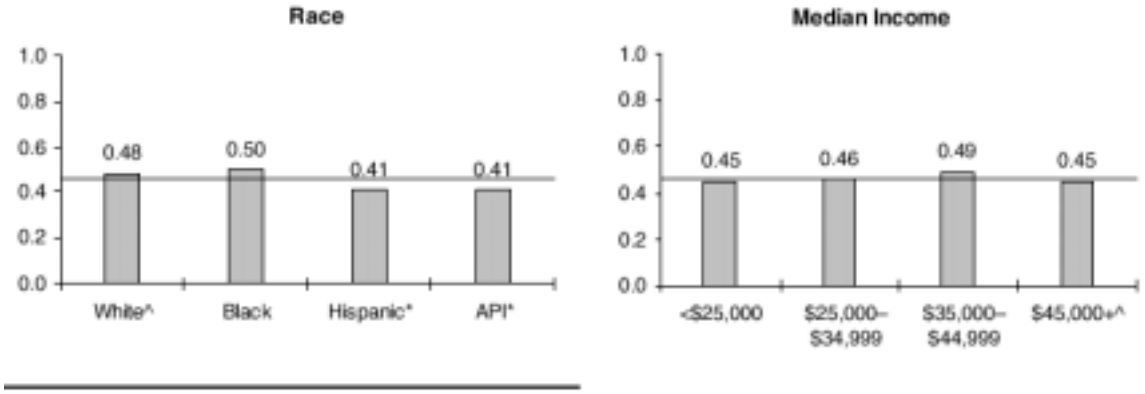


^ Indicates reference group.
*p<0.05 and relative rate 10% for comparison of group with reference group.
Key: NHOPI=Native Hawaiian or Other Pacific Islander; AI/AN=American Indian/Alaska Native; HS=High School
DSU=Data do not meet the criteria for statistical reliability, data quality, or confidentiality.
Source: Agency for Healthcare Research and Quality, Healthcare Cost and Utilization Project, State Inpatient Database (16 States), 2000.

Hispanics and Asians or Pacific Islanders have lower death rates when hospitalized for less severe conditions. Differences in potentially avoidable death are noted. Death rates in low-mortality DRGs[1] were significantly lower among Hispanics (0.41 per 1000 relevant admissions) and APIs (0.41 per 1000) compared with non-Hispanic whites (0.48 per 1000) (Figure 13) (HCUP SID 16 State database, 2000).

[1] DRGs are Diagnosis Related Groups. Low mortality DRGs are DRGs that generally have mortality rates under 0.5%, excluding trauma, immunocompromised, and cancer patients.

Figure 13. Deaths per 1,000 admissions in low-mortality DRGs (Total 16 States = 0.46)



^ Indicates reference group.
*p<0.05 and relative rate >10% for comparison of group with reference group.
Key: NHOPI=Native Hawaiian or Other Pacific Islander; AI/AN=American Indian/Alaska Native; HS=High School
DSU=Data do not meet the criteria for statistical reliability, data quality, or confidentiality.
Source: Agency for Healthcare Research and Quality, Healthcare Cost and Utilization Project, State Inpatient Database (16 States), 2000.

A measure of medication safety, the percentage of persons who report that their provider does not usually ask about medications and treatments other doctors may give, overlaps with the concept of patient-provider communication, which is discussed in the Access chapter. Black (86%) and Hispanic (86%) patients are more likely to report that their provider does not ask about medications and treatments other doctors may give than white (80%) compared with non-Hispanic white (79%) patients, respectively (MEPS, 1999).

In summary, racial and ethnic minorities often have higher rates of some complications, though they have lower rates on other patient safety measures.

Timeliness

Key Findings:

- Persons with lower income and less education face many barriers to receiving timely care.
- Households headed by Hispanics were more likely than those headed by non-Hispanics to report difficulties obtaining care.
- Many minorities are more likely to experience long wait times to see their health care provider.
- Compared with whites, blacks also experience longer waits in emergency departments and are more likely to leave without being seen.

Health care cannot prevent death and disability if it is delivered too late. For this reason, timeliness is a critical aspect of high-quality health care. Delays in health care delivery can lead to complications that not only make recovery more difficult, but also increase health care costs. Unfortunately, patients frequently face delays when scheduling appointments, visiting their health care providers, and entering hospital emergency departments.

Two aspects of timeliness are included in this section (Tables 19 and 20):

- Patient perceptions of inadequate access and need
- Waiting times

Patient Perceptions of Inadequate Access and Need

Patients' perceptions are inherently subjective and, therefore, difficult to standardize and quantify. But the unmet needs that result from insufficient access and receipt of treatment are tangible. If critical needs continue to go unmet, health care problems may worsen and the patient may ultimately enter the health care system with a much more advanced stage of illness. The NHDR focuses on measures of delayed care, the confidence a person has that he or she could obtain needed care, and ability to see clinicians when the person deems it necessary.

How the Nation is doing

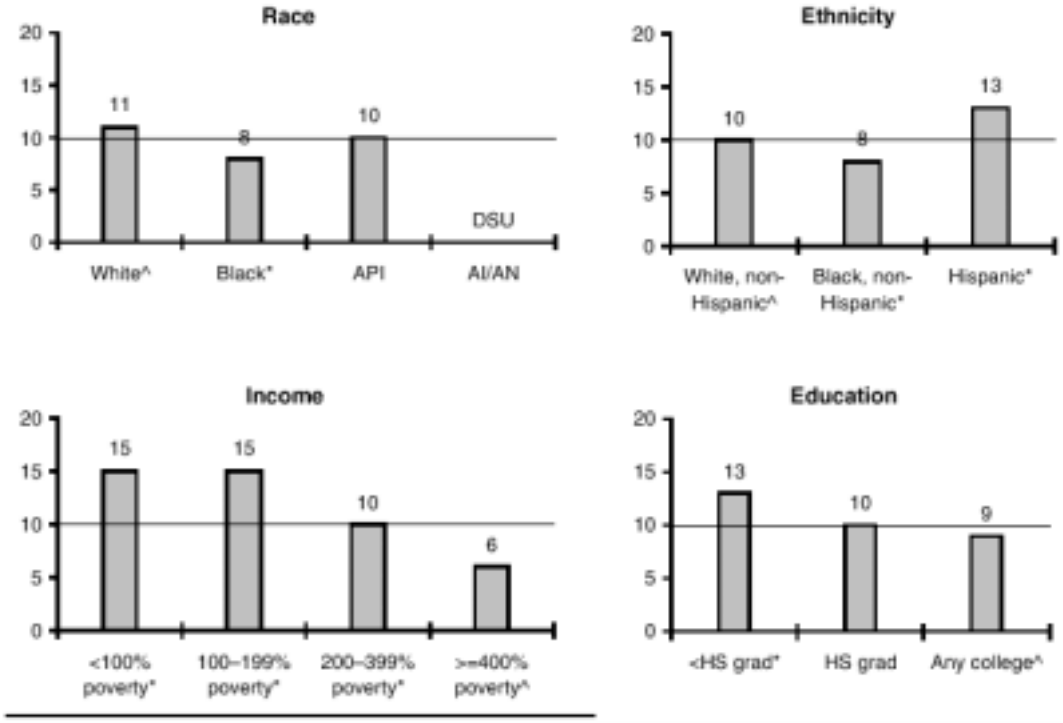
Hispanic families and both families that are poor and have low education levels are more likely to report problems getting health care. In general, Hispanics and people of lower socioeconomic status are more likely to perceive unmet health care needs. For example, in the general population, about 10% of families report that they experience difficulties or delays in obtaining health care or that they do not receive needed health care for one or more family members (MEPS, 1999). Households headed by Hispanics were more likely (13%) than those headed by non-Hispanic whites (10%) to report difficulties obtaining care (Figure 14). Similarly, poor (15%), near poor (15%), and middle income (10%) persons are more likely to report difficulties obtaining care than higher income persons (6%). Families in which the head of the household has less than a high school education (13%), fare worse than those headed by

college attendees (9%). Hispanics and those with low socioeconomic status are also more likely to experience difficulties or delays due to financial or insurance reasons, forego health care because the family needed the money, and have low confidence that they can get health care when they need it (MEPS, 1999).

Racial differences in perceptions of need are more complex. Households headed by blacks (8%) are less likely than those headed by whites (11%) to report that they experience difficulties or delays in obtaining health care (MEPS, 1999). In addition, Asians are more likely than whites to report difficulty scheduling appointments for routine care (MEPS, 2000).

In summary, Hispanics and people of lower socioeconomic status are more likely to report unmet health care needs, while racial differences tend to be smaller. While it is true that patient perceptions of unmet need may not correlate with actual access to needed services, these population differences provide important quality information to health care systems, especially those who care for priority populations with perceived unmet needs.

Figure 14. Percent of families that experience difficulties or delays in obtaining health care or do not receive needed health care for one or more family members (U.S. total = 10%)



^ Indicates reference group.
*p<0.05 and relative rate >10% for comparison of group with reference group.
Key: NHOPI=Native Hawaiian or Other Pacific Islander; AI/AN=American Indian/Alaska Native; HS=High School
DSU=Data do not meet the criteria for statistical reliability, data quality, or confidentiality.
Source: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, 2000.

Waiting Times

Why waiting times are important

Another dimension of timeliness is the amount of time a patient must wait, after entering the health care facility, before being seen by a health care provider. Long waits in a provider's office are inconvenient and lead to missed appointments and lower patient satisfaction.

In contrast, long waits in emergency departments can be fatal. Triage systems are effective at prioritizing patients by need, but long waits often prolong pain and fear. While patients seek care from emergency departments for different reasons and with varying levels of urgency, they wait an average of 45 minutes to see a physician. Those with emergent conditions (i.e., conditions that are ideally cared for in less than 15 minutes) wait an average of 24 minutes.[139]

How the Nation is doing

Disparities in emergency department waiting times are observed. Specifically, while differences in waits for emergent/urgent care are not noted, blacks and the uninsured are more likely than whites and the insured to report waiting over 1 hour for semi-urgent/non-urgent care and to report leaving the emergency department without being seen (NHAMCS-ED, 1999-2000).

In summary, many racial and ethnic minorities and people of lower socioeconomic position report longer waits to see health care providers. Overall, our health care system is not always respectful of patients' and providers' time. While waiting times may be related to patient health care needs and care-seeking behaviors, these population differences present important opportunities for system improvement.

Patient Centeredness

Key Finding:

- Blacks are more satisfied than whites that their providers listen carefully, explain things in a way they understand, show respect for what they had to say, and spend enough time with them.
- Hispanics are less likely than non-Hispanic whites to report that their care is sufficiently patient centered.

Why patient centeredness is important

The Institute of Medicine defines patient centeredness as "health care that establishes a partnership among practitioners, patients, and their families (when appropriate) to ensure that decisions respect patients' wants, needs, and preferences and that patients have the education and support they need to make decisions and participate in their own care."[140] Patient-centered care is guided by the patient's values and is personalized to ensure that provider instructions are properly understood and followed.

How the Nation is doing

NHQR Findings:
The NHQR found many areas for which patient centeredness of care could be improved. For example, the report identifies that less than half of those surveyed indicated that their provider always spent enough time with them, while 16% reported that they only sometimes or never did. The NHQR examined measures of the time spent with provider, as well as the patient's perceptions of the clinician's skill, degree to which they were treated with respect and dignity, and ability to understand the clinician's explanations. (See the NHQR for details.)

NHDR Findings:
Measures of patient centeredness overlap with several concepts discussed in Chapter 4 (Tables 21 and 22):

- Patient-provider communication
- Patient-provider relationship

Evidence of racial and ethnic differences in patient centeredness is present. For example, Hispanics are more likely than non-Hispanic whites (yet blacks are less likely than whites) to report that their providers "did not listen carefully" or "explain themselves clearly" (MEPS, 2000). Socioeconomic differences in other aspects of patient-provider communication were not observed. Further, information on patient-provider communication is provided in the Access to Care chapter.

Equity

Equity encompasses that core need of the health care system to provide care that does not vary in quality because of personal characteristics such as gender, ethnicity, geographic location and socioeconomic status. Equity is the focus of the NHDR and relates to all findings presented in this report.

Table 1. Racial and Ethnic Differences in Effectiveness of Care: Cancer

Measure	Racial Difference[1]					Ethnic Difference[2]	
	Black	Asian	NHOPI	AI/AN	>1 Race	NHB	Hispanic
Screening for Breast Cancer							
% of women (40 and over) who report they had a mammogram within the past 2 years[3]	◒	◒	○	◒	●	◒	◒
% of breast cancers diagnosed at late stage[4]	◒	●	●	◒		◒	◒
Screening for Cervical Cancer							
% of women (18 and over) who report they had a Pap smear within the past 3 years[iii]	◓	◒	○	●	●	●	◒
% of cervical cancers diagnosed at late stage[iv]	●	●	●	○		●	●
Screening for Colorectal Cancer							
% of men and women (50 and over) who report they ever had a flexible sigmoidoscopy/colonoscopy[iii]	◒	◒	○	●	●	◒	◒
% of men and women (50 and over) who report they had a fecal occult blood test (FOBT) within the past 2 years[iii]	●	●	○	●	●	◒	◒
% of colorectal cancers diagnosed at late stage[iv]	◒	●	◒	●		◒	◒
Cancer Treatment[5]							
Cancer deaths per 100,000 persons per year for all cancers	◒	◓[v]		◓		◒	◓
Cancer deaths per 100,000 persons per year for most common cancers, prostate cancer	◒	◓[v]		◓		◒	◓
Cancer deaths per 100,000 persons per year for most common cancers, breast cancer	◒	◓[v]		◓		◒	◓
Cancer deaths per 100,000 persons per year for most common cancers, lung cancer	◒	◓[v]		◓		◒	◓
Cancer deaths per 100,000 persons per year for most common cancers, colorectal cancer	◒	◓[v]		◓		◒	◓
Palliative Care[6]							
% of people who died of cancer who received hospice care	●[vi]						
Median length of stay for cancer patients who received hospice care	●[vi]						

[1] Compared with whites.
[2] Compared with non-Hispanic whites.
[3] Source: NHIS, 2000.
[4] Source: SEER, 1998-1999. This source did not collect information for >1 race.
[5][5] Source: NVSS-M, 2000. This source did not collect information on Asians and NHOPIs separately but in aggregate as Asians or Pacific Islanders. This source did not collect information for >1 race.
[6] Source: NHHCS, 2000. Sample size constraints permit black-white comparisons only.

Key to Quality of Health Care Tables:

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◓: Selected population receives better quality care than the comparison population
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Table 2. Socioeconomic Differences in Effectiveness of Care: Cancer

Measure	Income Difference[1]			Educational Difference[2]		Insurance Difference[3]
	<100%	100-199%	200-399%	<HS	HS Grad	Uninsured
Screening for Breast Cancer						
% of women (40 and over) who report they had a mammogram within the past 2 years[4]	◒	◒	◒	◒	◒	◒
Screening for Cervical Cancer						
% of women (18 and over) who report they had a Pap smear within the past 3 years[iv]	◒	◒	◒	◒	◒	◒
Screening for Colorectal Cancer						
% of men and women (50 and over) who report they ever had a flexible sigmoidoscopy/colonoscopy[iv]	◒	◒	◒	◒	◒	◒
% of men and women (50 and over) who report they had a fecal occult blood test (FOBT) within the past 2 years[iv]	◒	◒	◒	◒	◒	◒
Cancer Treatment[5]						
Cancer deaths per 100,000 persons per year for all cancers				◒	◒	
Cancer deaths per 100,000 persons per year for most common cancers, prostate cancer				◒	◒	
Cancer deaths per 100,000 persons per year for most common cancers, breast cancer				●	◒	
Cancer deaths per 100,000 persons per year for most common cancers, lung cancer				◒	◒	
Cancer deaths per 100,000 persons per year for most common cancers, colorectal cancer				◒	◒	

[1] Compared with persons with family incomes 400% of Federal poverty threshold or above.
[2] Compared with persons with any college education.
[3] Compared with person under 65 with any private health insurance.
[4] Source: NHIS, 2000.
[5] Source: NVSS-M, 2000. This source did not collect information for >1 race. This source did not collect information on income or insurance.
HS=High school

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Table 3. Racial and Ethnic Differences in Effectiveness of Care: Chronic Kidney Disease

Measure	Racial Difference[1]					Ethnic Difference[2]	
	Black	Asian	NHOPI	AI/AN	>1 Race	NHB	Hispanic
Management of End-Stage Renal Disease[3]							
% of hemodialysis patients with urea reduction ratio 65% or higher	◒	◓	○	●		◒	●
% of hemodialysis patients with hemoglobin 11 or higher	●	●	○	●		●	●
Renal Transplantation[4]							
% of dialysis patients registered on the waiting list for transplantation	◒	◒[4]		◒		◒	◒
% of patients with treated chronic kidney failure who receive a transplant within 3 years of registration on the waiting list	◒	◒[4]		◒		◒	◒

[1] Compared with whites.
[2] Compared with non-Hispanic whites.
[3] Source: CMS's End Stage Renal Disease Clinical Performance Measures Project, 2001. This source did not collect information for >1 race.
[4] USRDS, 2000. This source did not collect information on Asians and NHOPIs separately but in aggregate as Asians or Pacific Islanders. This source did not collect information for >1 race.
NHOPI=Native Hawaiian or Other Pacific Islander; AI/AN=American Indian/Alaska Native; HS=high school

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Table 4. Racial and Ethnic Differences in Effectiveness of Care: Diabetes

Measure	Racial Difference[1]					Ethnic Difference[2]	
	Black	Asian	NHOPI	AI/AN	>1 Race	NHB	Hispanic
Management of Diabetes							
% of adults with diabetes who had a hemoglobin A1c measurement at least once in past year[3]	●	○[iii]		○		●	●
% of adults with diabetes who had a lipid profile in past two years[iii]	●	○[iii]		○		●	●
% of adults with diabetes who had a retinal eye examination in past year[iii]	●	○[iii]		○		●	●
% of adults with diabetes who had a foot examination in past year[iii]	●	○[iii]		○		●	●
% of adults with diabetes who had an influenza immunization in past year[iii]	◒	○[iii]		○		◒	◒
Hospital admissions for uncontrolled diabetes per 100,000 population[4]	*[iv]	◓[iv]				◒	◒
Hospital admissions for short term complications of diabetes per 100,000 population[iv]	*[iv]	◓[iv]				◒	●
Hospital admissions for long term complications of diabetes per 100,000 population[iv]	*[iv]	◓[iv]				◒	◒
Hospital admissions for lower extremity amputations in patients with diabetes per 1,000 population[5]	◒	○	○	○			

[1] Compared with whites.
[2] Compared with non-Hispanic whites.
[3] Source: MEPS, 2000. This source did not collect information on Asians and NHOPIs separately but in aggregate as Asians or Pacific Islanders. This source did not collect information for >1 race.
[4] Source: HCUP SID 16 State database, 2000. This source categorizes race/ethnicity very differently from other sources. Race/ethnicity information is categorized as a single item: non-Hispanic white, non-Hispanic black, Hispanic, Asian or Pacific Islander. These contrasts compare each group with non-Hispanic whites. An * is inserted in the black column to indicate that estimates for this group could not be produced.
[5] Source: NHDS, 1998-2000. This source did not collect information for >1 race. Missing rates preclude analysis by ethnicity.
NHOPI=Native Hawaiian or Other Pacific Islander; AI/AN=American Indian/Alaska Native; HS=high school

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Table 5. Socioeconomic Differences in Effectiveness of Care: Diabetes

Measure	Income Difference[1]			Educational Difference[2]		Insurance Difference[3]
	<100%	100-199%	200-399%	<HS	HS Grad	Uninsured
Management of Diabetes						
% of adults with diabetes who had a hemoglobin A1c measurement at least once in past year[iii]	●	●	●	●	●	○
% of adults with diabetes who had a lipid profile in past two years[iii]	◒	◒	◒	●	●	○
% of adults with diabetes who had a retinal eye examination in past year[iii]	◒	◒	◒	◒	◒	○
% of adults with diabetes who had a foot examination in past year[iii]	●	●	●	●	●	○
% of adults with diabetes who had an influenza immunization in past year[iii]	●	●	●	●	●	○

[i] Compared with persons with family incomes 400% of Federal poverty threshold or above.
[2] Compared with persons with any college education.
[3] Compared with person under 65 with any private health insurance.
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Table 6. Racial and Ethnic Differences in Effectiveness of Care: Heart Disease

Measure	Racial Difference[1]					Ethnic Difference[2]	
	Black	Asian	NHOPI	AI/AN	>1 Race	NHB	Hispanic
Screening for High Blood Pressure							
% of adults who have had their blood pressure measured within the preceding 2 years and can state whether their blood pressure was normal or high[3]	◓	◒	○	●	○	◓	◒
Screening for High Cholesterol							
% of adults who have had their blood cholesterol checked within the preceding 5 years[3]	●	●	○	◒	○	●	◒
Counseling on Risk Factors							
% of smokers receiving advice to quit smoking[4]	●	○[iv]		○		●	◒
Treatment of Acute Myocardial Infarction[5]							
% of AMI patients administered aspirin within 24 hours of admission	*[v]	●[v]		○		●	◒
% of AMI patients with aspirin prescribed at discharge	*[v]	●[v]		○		●	◒
% of AMI patients administered beta blocker within 24 hours of admission	*[v]	●[v]		○		●	◒
% of AMI patients with beta blocker prescribed at discharge	*[v]	○[v]		○		●	◒
% of AMI patients with left ventricular systolic dysfunction prescribed ACE inhibitor at discharge	*[v]	○[v]		○		●	●
% of AMI patients given smoking cessation counseling while hospitalized	*[v]	○[v]		○		◓	●
Treatment of Acute Heart Failure							
% of heart failure patients with left ventricular systolic dysfunction prescribed ACE inhibitor at discharge[v]	*[v]	●[v]		●		●	●
Management of Hypertension							
% of adults with hypertension whose blood pressure is under control[6]	○	○	○	○		●	○
Management of Congestive Heart Failure							
Hospital admissions for congestive heart failure per 100,000 population[7]	◒	○	○	○			

[1] Compared with whites.
[2] Compared with non-Hispanic whites.
[3] Source: NHIS, 1998.
[4] Source: MEPS, 2000. This source did not collect information on Asians and NHOPIs separately but in aggregate as Asians or Pacific Islanders. This source did not collect information for >1 race.
[5] Source: Medicare Quality Improvement Organization program. This source categorizes race/ethnicity very differently from other sources. Race/ethnicity information is categorized as a single item: non-Hispanic white, Non-Hispanic black, Hispanic, Asian or Pacific Islander. These contrasts compare each group with non-Hispanic whites. An * is inserted in the Black column to indicate that estimates for this group could not be produced.
[6] Source: NHANES, 1999-2000.
[7] Source: NHDS, 2000. This source did not collect information for >1 race. Missing rates preclude analysis by ethnicity.
NHOPI=Native Hawaiian or Other Pacific Islander; AI/AN=American Indian/Alaska Native; HS=high school

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Table 7. Socioeconomic Differences in Effectiveness of Care: Heart Disease

Measure	Income Difference[1]			Educational Difference[2]		Insurance Difference[3]
	<100%	100-199%	200-399%	<HS	HS Grad	Uninsured
Screening for High Blood Pressure						
% of adults who have had their blood pressure measured within the preceding 2 years and can state whether their blood pressure was normal or high[4]	◒	◒	◒	◒	◒	◒
Screening for High Cholesterol						
% of adults who have had their blood cholesterol checked within the preceding 5 years[iv]	◒	◒	◒	◒	◒	◒
Counseling on Risk Factors						
% of smokers receiving advice to quit smoking[5]	●	◒	●	●	●	◒
Management of Hypertension						
% of adults with hypertension whose blood pressure is under control[6]	○	○	○	◒	●	

[1] Compared with persons with family incomes 400% of Federal poverty threshold or above.
[2] Compared with persons with any college education.
[3] Compared with person under 65 with any private health insurance.
[4] Source: NHIS, 1998.
[5] Source: MEPS, 2000.
[6] Source: NHANES, 1999-2000.
HS=high school

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Table 8. Racial and Ethnic Differences in Effectiveness of Care: HIV/AIDS

Measure	Racial Difference[1]					Ethnic Difference[2]	
	Black	Asian	NHOPI	AI/AN	>1 Race	NHB	Hispanic
AIDS Prevention							
New AIDS cases per 100,000 population 13 and over[3]	*[iii]	◓[iii]		◒		◒	◒
Management of HIV/AIDS							
HIV-infection deaths per 100,000 population[4]	◒	◓[iv]		●		◒	◒

[1] Compared with whites.
[2] Compared with non-Hispanic whites.
[3] Source: CDC, 2000. This source categorizes race/ethnicity very differently from other sources. Race/ethnicity information is categorized as a single item: non-Hispanic white, non-Hispanic black, Hispanic, Asians or Pacific Islanders. These contrasts compare each group with non-Hispanic whites. An * is inserted in the black column to indicate that estimates for this group could not be produced.
[4] Source: NVSS-M, 2000. This source did not collect information on Asians and NHOPIs separately but in aggregate as Asian or Pacific Islander. This source did not collect information for >1 race.
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Table 9. Socioeconomic Differences in Effectiveness of Care: HIV/AIDS

Measure	Income Difference[1]			Educational Difference[2]		Insurance Difference[3]
	<100%	100-199%	200-399%	<HS	HS Grad	Uninsured
Management of HIV/AIDS						
HIV-infection deaths per 100,000 population[iv]				◒	◒	

[1] Compared with persons with family incomes 400% of Federal poverty threshold or above.
[2] Compared with persons with any college education.
[3] Compared with persons under 65 with any private health insurance.
Source: NVSS-M, 2000.
NHOPI=Native Hawaiian or Other Pacific Islander; AI/AN=American Indian/Alaska Native; HS=high school

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Table 10. Racial and Ethnic Differences in Effectiveness of Care: Maternal and Child Health

Measure	Racial Difference[1]					Ethnic Difference[2]	
	Black	Asian	NHOPI	AI/AN	>1 Race	NHB	Hispanic
Maternity Care[3]							
% of pregnant women receiving prenatal care in first trimester	◒	●	◒	◒		◒	◒
% of live born infants with low birth weight (<2500 grams)	◒	●	●	●		◒	●
% of live born infants with very low birth weight (<1500 grams)	◒	●	◒	●		◒	●
Infant mortality per 1000 live births, all	◒	◓	◒	◒		◒	●
Infant mortality per 1000 live births, birth weight >2499 grams	◒	◓	◒	◒		◒	●
Infant mortality per 1000 live births, birth weight 1500-2499 grams	●	◓	○	◒		●	●
Infant mortality per 1000 live births, birth weight <1500 grams	◒	●	◒	◒		◒	●
Maternal deaths per 100,000 live births	◒	○	○	○		◒	◒
Immunization, Childhood[4]							
% of children 19-35 months who received all recommended vaccines	◒	●	○	●	●	◒	●
% of children 19-35 months who received 4 doses of DPaT vaccine	◒	●	○	●	●	◒	●
% of children 19-35 months who received 3 doses of polio vaccine	◒	●	●	●	●	◒	●
% of children 19-35 months who received 1 dose of MMR vaccine	◒	●	●	●	●	◒	●
% of children 19-35 months who received 3 doses of Hib vaccine	◒	●	●	●	●	◒	◒
% of children 19-35 months who received 3 doses of hepatitis B vaccine	◒	●	●	●	●	◒	●
% of children 19-35 months who received 1 dose of varicella vaccine	●	◓	○	●	●	●	◓
Immunization, Adolescent[5]							
% of adolescents (13-15) who received 3 or more doses of hepatitis B vaccine	●	●	○	○	○	●	◓
% of adolescents (13-15) who received 2 or more doses of MMR vaccine	●	●	○	○	○	●	●
% of adolescents (13-15) who received 1 or more doses of Td booster	●	●	○	○	○	●	●
% of adolescents (13-15) who received 3 or more doses of varicella vaccine	●	○	○	○	○	●	●
Childhood Dental Care							
% of children 2-17 with a dental visit[6]	◒	●[vi]		○		◒	◒

[1] Compared with whites.
[2] Compared with non-Hispanic whites.
[3] Source: NVSS, 2000. This source did not collect information for >1 race.
[4] Source: NIS, 2001.
[5] Source: NHIS, 2000.
[6] Source: MEPS, 1999. This source did not collect information on Asians and NHOPIs separately but in aggregate. This source did not collect information for >1 race.
NHOPI=Native Hawaiian or Other Pacific Islander; AI/AN=American Indian/Alaska Native; HS=high school

Table 10. Racial and Ethnic Differences in Effectiveness of Care: Maternal and Child Health (continued)

Measure	Racial Difference[1]					Ethnic Difference[2]	
	Black	Asian	NHOPI	AI/AN	>1 Race	NHB	Hispanic
Treatment of Pediatric Gastroenteritis							
Hospital admissions for pediatric gastroenteritis per 100,000 population[3]	*iii	◓ iii				●	◒

[1] Compared with whites.
[2] Compared with non-Hispanic whites.
[3] Source: HCUP SID 16 State database, 2000. This source categorizes race/ethnicity very differently from other sources. Race/ethnicity information is categorized as a single item: Non-Hispanic white, Non-Hispanic black, Hispanic, Asian or Pacific Islander. These contrasts compare each group with non-Hispanic whites. An * is inserted in the Black column to indicate that estimates for this group could not be produced.

Key to Quality of Health Care Tables:

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Table 11. Socioeconomic Differences in Effectiveness of Care: Maternal and Child Health

Measure	Income Difference[1]			Educational Difference[2]		Insurance Difference[3]
	<100%	100-199%	200-399%	<HS	HS Grad	Uninsured
Maternity Care[4]						
% of pregnant women receiving prenatal care in first trimester				◒	◒	
% of live born infants with low birth weight (<2500 grams)				◒	◒	
% of live born infants with very low birth weight (<1500 grams)				◒	◒	
Infant mortality per 1000 live births, all births				◒	◒	
Infant mortality per 1000 live births, birth weight >2499 grams				◒	◒	
Infant mortality per 1000 live births, birth weight 1500-2499 grams				◒	◒	
Infant mortality per 1000 live births, birth weight <1500 grams				●	◒	
Maternal deaths per 100,000 live births				◒	◒	
Immunization, Childhood[5]						
% of children 19-35 months who received all recommended vaccines	◒	◒	◒			
% of children 19-35 months who received 4 doses of DPaT vaccine	◒	◒	◒			
% of children 19-35 months who received 3 doses of polio vaccine	◒	◒	◒			
% of children 19-35 months who received 1 dose of MMR vaccine	◒	◒	◒			
% of children 19-35 months who received 3 doses of Hib vaccine	◒	◒	◒			
% of children 19-35 months who received 3 doses of hepatitis B vaccine	◒	◒	◒			
% of children 19-35 months who received 1 dose of varicella vaccine	◒	◒	◒			
Immunization, Adolescent[6]						
% of adolescents (13-15) who received 3 or more doses of hepatitis B vaccine	●	●	●			◒
% of adolescents (13-15) who received 2 or more doses of MMR vaccine	●	●	●			●
% of adolescents (13-15) who received 1 or more doses of tetanus-diptheria booster	●	●	●			●
% of adolescents (13-15) who received 3 or more doses of varicella vaccine	●	●	●			●
Childhood Dental Care						
% of children 2-17 with a dental visit in the past year[7]	◒	◒	◒			◒

[1] Compared with persons with family incomes 400% of Federal poverty threshold or above.
[2] Compared with mothers with any college education.
[3] Compared with person under 65 with any private health insurance.
[4] Source: NVSS, 2000.
[5] Source: NIS, 2001.
[6] Source: NHIS, 2000.
[7] Source: MEPS, 1999.

Table 12. Racial and Ethnic Differences in Effectiveness of Care: Mental Health

Measure	Racial Difference[1]					Ethnic Difference[2]	
	Black	Asian	NHOPI	AI/AN	>1 Race	NHB	Hispanic
Treatment of Depression							
Suicide deaths per 100,000 population[3]	◓	◓[3]		●		◓	◓

[1] Compared with whites.
[2] Compared with non-Hispanic whites.
[3] Source: NVSS-M, 2000. This source did not collect information on Asians and NHOPIs separately but in aggregate as Asian or Pacific Islander. This source did not collect information for >1 race. This source did not collect information on income or insurance.
NHOPI=Native Hawaiian or Other Pacific Islander; AI/AN=American Indian/Alaska Native; HS=high school

Key to Quality of Health Care Tables:
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Table 13. Socioeconomic Differences in Effectiveness of Care: Mental Health

Measure	Income Difference[1]			Educational Difference[2]		Insurance Difference[3]
	<100%	100-199%	200-399%	<HS	HS Grad	Uninsured
Treatment of Depression						
Suicide deaths per 100,000 population[iii]				◒	◒	

[1] Compared with persons with family incomes 400% of Federal poverty threshold or above.
[2] Compared with persons with any college education.
[3] Compared with persons under 65 with any private health insurance.

Table 14. Racial and ethnic disparities in effectiveness of care: Respiratory diseases

Measure	Racial Difference[1]					Ethnic Difference[2]	
	Black	Asian	NHOPI	AI/AN	>1 Race	NHB	Hispanic
Influenza Immunization							
% of high risk persons 18-64 who received influenza vaccine in past year[3]	◒	●	○	●	●	◒	●
% of persons 65 and over who received influenza vaccine in the past year[iii]	◒	●	○	○	○	◒	◒
% of adult nursing home residents who received influenza vaccine in past year[4]	●	○	○	○			
Hospital admissions for influenza per 100,000 population 65 and over[5]	*[v]	◒[v]				●	◒
Pneumococcal Immunization							
% of high risk persons 18-64 who ever received pneumococcal vaccination[iii]	●	○	○	○	●	●	◒
% of persons 65 and over who ever received pneumococcal vaccination[iii]	◒	●	○	○	○	◒	◒
% of adult nursing home residents who ever received pneumococcal vaccination[iv]	●	○	○	○			
Treatment of Pneumonia[6]							
% of pneumonia patients who have blood cultures taken before antibiotics	*[iv]	●[vi]		◓		◒	◒
% of pneumonia patients who receive initial antibiotic dose within 8 hours of arrival	*[iv]	●[vi]		●		◒	◒
% of pneumonia patients who receive initial antibiotic consistent with current recommendations	*[iv]	●[vi]		●		◒	◒
% of pneumonia patients who receive influenza screening or vaccination	*[iv]	●[vi]		◓		◒	◒
% of pneumonia patients who receive pneumococcal screening or vaccination	*[iv]	◒[vi]		◓		◒	◒

[1] Compared with whites.
[2] Compared with non-Hispanic whites.
[3] Source: NHIS, 2000.
[4] Source: NNHS, 1999. This source did not collect information for >1 race. Missing rates preclude analysis by ethnicity.
[5] Source: HCUP SID 16-State database, 2000. This source categorizes race/ethnicity very differently from other sources. Race/ethnicity information is categorized as a single item: non-Hispanic white, non-Hispanic black, Hispanic, Asian or Pacific Islander. These contrasts compare each group with non-Hispanic whites. An * is inserted in the black column to indicate that estimates for this group could not be produced.
[6] Source: Medicare Quality Improvement Organization program. This source categorizes race/ethnicity very differently from other sources. Race/ethnicity information is categorized as a single item: non-Hispanic white, non-Hispanic black, Hispanic, Asians or Pacific Islanders. These contrasts compare each group with non-Hispanic whites. An * is inserted in the black column to indicate that estimates for this group could not be produced.

Table 14. Racial and ethnic disparities in effectiveness of care: Respiratory diseases (continued)

Treatment of Upper Respiratory Infection							
Courses of antibiotics prescribed for sole diagnosis of common cold per population[1]	●	○	○	○			
Management of Asthma							
Hospital admissions for asthma per 100,000 population under 18[2]	◒	○	○	○			
Hospital admissions for asthma per 100,000 population 18 and over[8]	◒	○	○	○			
Treatment of Tuberculosis							
Completion of TB Therapy[3]	●	●[ix]			●	◒	●

[1] Source: NAMCS/NHAMCS, 1999-2000. This source did not collect information for >1 race. Missing rates preclude analysis by ethnicity.
[2] Source: NHDS, 2000. This source did not collect information for >1 race. Missing rates preclude analysis by ethnicity.
[3] Source: CDC's National TB Surveillance System, 1999. This source did not collect information on Asians and NHOPIs separately but in aggregate as Asians or Pacific Islanders. This source did not collect information for >1 race.

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Table 15. Socioeconomic Differences in Effectiveness of Care: Respiratory Diseases

Measure	Income Difference[1]			Educational Difference[2]		Insurance Difference[3]
	<100%	100-199%	200-399%	<HS	HS Grad	Uninsured
Influenza Immunization						
% of high risk persons 18-64 who received influenza vaccination in the past year[4]	◒	◒	●	◒	●	◒
% of persons 65 and over who received influenza vaccination in the past year	◒	◒	●	◒	◒	
Pneumococcal Immunization						
% of high risk persons 18-64 who ever received pneumococcal vaccination	●	●	●	●	●	●
% of persons 65 and over who ever received pneumococcal vaccination	◒	◒	●	◒	◒	

[1] Compared with persons with family incomes 400% of Federal poverty threshold or above.
[2] Compared with mothers with any college education.
[3] Compared with person under 65 with any private health insurance.
[4] Source: NHIS, 2000.
HS=high school

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Table 16. Racial and Ethnic Differences in Effectiveness of Care: Long term care

Measure	Racial Difference[1]					Ethnic Difference[2]	
	Black	Asian	NHOPI	AI/AN	>1 Race	NHB	Hispanic
Nursing Facility Care[3]							
% of nursing home residents with pain	*[iii]	◓[3]		●		◓	◓
% of nursing home residents with pressure sores	*[iii]	◓[3]		●		◒	●
% of nursing home residents in physical restraints	*[iii]	◒[3]		●		●	◒

[1] Compared with whites.
[2] Compared with non-Hispanic whites.
[3] Source: CMS Resident Profile Table. This source categorizes race/ethnicity very differently from other sources. Race/ethnicity information is categorized as a single item: non-Hispanic white, non-Hispanic black, Hispanic, Asian or Pacific Islander. These contrasts compare each group with non-Hispanic whites. An * is inserted in the black column to indicate that estimates for this group could not be produced.
NHOPI=Native Hawaiian or Other Pacific Islander; AI/AN=American Indian/Alaska Native; HS=high school

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Table 17. Racial and Ethnic Differences in Patient Safety

Measure	Racial Difference[1]					Ethnic Difference[2]	
	Black	Asian	NHOPI	AI/AN	>1 Race	NHB	Hispanic
Nosocomial Infections[3]							
Infection due to intravenous lines or catheters per 1000 selected discharges	*[3\iii]	◒[iii]				◒	●
Postoperative septicemia per 1000 elective surgical discharges of 4+ days	*[iii]	◒[iii]				◒	◒
Complications of Care[3]							
Postoperative hemorrhage or hematoma with surgical drainage or evacuation per 1000 surgical discharges	*[iii]	◒[iii]				◒	●
Postoperative pulmonary embolus or deep vein thrombosis per 1000 surgical discharges	*[iii]	◓[iii]				◒	◓
Postoperative respiratory failure per 1000 elective surgical discharges	*[iii]	◒[iii]				◒	◒
Postoperative physiologic/metabolic derangements per 1000 elective surgeries	*[iii]	◒[iii]				◒	◒
Complications of anesthesia per 1000 surgical discharges	*[iii]	◓[iii]				◓	◓
Decubitus ulcers per 1000 selected stays of 4 or more days	*[iii]	◓[iii]				◒	●
Postoperative hip fractures per 1000 surgical discharges age 18+ years	*[iii]	◓[iii]				◓	◓
Injuries or Adverse Events Due to Technical Errors[iii]							
Accidental laceration or puncture during procedure per 1000 discharges	*[iii]	◓[iii]				◓	●
Iatrogenic pneumothorax per 1000 relevant discharges	*[iii]	◓[iii]				◓	◓
Postoperative abdominal wound dehiscence per 1000 relevant discharges	*[iii]	◓[iii]				◓	◓
Foreign body left in during procedure per 1000 discharges	*[iii]	◓[iii]				◓	●
Transfusion reactions per 1000 selected discharges	*[iii]	◓[iii]				◓	●
Birth Related Trauma[iii]							
Birth trauma injury per 1000 selected live births	***[iii]**	◓[iii]				◓	◓
Obstetric trauma per 1000 instrument-assisted deliveries	***[iii]**	◓[iii]				◓	◓
Obstetric trauma per 1000 vaginal deliveries without instrument assistance	***[iii]**	◓[iii]				◓	◓
Obstetric trauma per 1000 Cesarean deliveries	***[iii]**	◓[iii]				◓	◓
Potentially Avoidable Death[4]							
Deaths per 1000 admissions in low-	***[iii]**	◓[iii]				◓	◓

[1] Compared with whites.
[2] Compared with non-Hispanic whites.
[3] Source: HCUP SID 16-State database, 2000. This source categorizes race/ethnicity very differently from other sources. Race/ethnicity information is categorized as a single item: non-Hispanic white, non-Hispanic black, Hispanic, Asians or Pacific Islanders. These contrasts compare each group with non-Hispanic whites. An * is inserted in the black column to indicate that estimates for this group could not be produced.
[4] Source: HCUP SID 16-State database, 2000. This source categorizes race/ethnicity very differently from other sources. Race/ethnicity information is categorized as a single item: non-Hispanic white, non-Hispanic black, Hispanic, Asians or Pacific Islanders. These contrasts compare each group with non-Hispanic whites. An * is inserted in the black column to indicate that estimates for this group could not be produced.

mortality DRGs						
Medication Safety						
Elderly prescribed inappropriate medications[1]	●	○[iv]	○			
Persons with provider who does not usually ask about medications and treatments other doctors may give[2]	◓	●[v]	●		◓	◓

[1] Source: MEPS, 1998. This source did not collect information on Asians and NHOPIs separately but in aggregate as Asians or Pacific Islanders. This source did not collect information for >1 race.
[2] Source: MEPS, 1999. This source did not collect information on Asians and NHOPIs separately but in aggregate as Asians or Pacific Islanders. This source did not collect information for >1 race.

NHOPI=Native Hawaiian or Other Pacific Islander; AI/AN=American Indian/Alaska Native; HS=high school

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Table 18. Socioeconomic Differences in Patient Safety

Measure	Income Difference[1]			Educational Difference[2]		Insurance Difference[3]
	<100%	100-199%	200-399%	<HS	HS Grad	Uninsured
Medication Safety						
Elderly prescribed inappropriate medications[4]				●	●	○
Persons with provider who does not usually ask about medications and treatments other doctors may give[5]	●	●	●	●	●	◓

[1] Compared with persons with family incomes 400% of Federal poverty threshold or above.
[2] Compared with mothers with any college education.
[3] Compared with persons under 65 with any private health insurance.

NHOPI=Native Hawaiian or Other Pacific Islander; AI/AN=American Indian/Alaska Native; HS=high school
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Table 19. Racial and Ethnic Differences in Timeliness

Measure	Racial Difference[1]					Ethnic Difference[2]	
	Black	Asian	NHOPI	AI/AN	>1 Race	NHB	Hispanic
Usual Source of Care[3]							
% of persons who have a specific source of ongoing care	◒	◒	○	●	●	◒	◒
% of persons in fair or poor health who have a specific source of ongoing care	●	●	○	○	●	◒	◒
% of persons with a hospital, emergency room, or clinic as source of ongoing care	◒	●	○	◒	◒	◒	◒
Unmet Need							
% of families that experience difficulties or delays in obtaining health care or do not receive needed care[4]	◓	●[iv]		○		◓	◒
% of families that experience difficulties or delays in obtaining health care due to financial or insurance reasons[iv]	●	○[iv]		○		●	◒
% of persons always can get appointment for routine care as soon as wanted[5]	●	◒[v]		○		●	◒
% of persons always can get care for illness or injury as soon as wanted[v]	●	○[v]		○		●	◒
Waiting Times							
% of persons who usually wait >30 minutes before seeing provider[iv]	◒	●[iv]		○		◒	◒
% of emergent/urgent emergency department visits with wait >=1 hour[6]	●	●[vi]		○			
% of semi-urgent/non-urgent emergency department visits with wait >=1 hour[vi]	◒	●[vi]		○			
% of emergency department visits in which the patient left without being seen[vi]	◒	○[vi]		○			

[1] Compared with whites.
[2] Compared with non-Hispanic whites.
[3] Source: NHIS, 2000.
[4] Source: MEPS, 1999. This source did not collect information on Asians and NHOPIs separately but in aggregate as Asian or Pacific Islander. This source did not collect information for >1 race.
[5] Source: MEPS, 2000. This source did not collect information on Asians and NHOPIs separately but in aggregate as Asian or Pacific Islander. This source did not collect information for >1 race.
[6] Source: NHAMCS-ED, 1999-2000. This source did not collect information on Asians and NHOPIs separately. This source did not collect information for >1 race or about income or education. Missing rates preclude analysis by ethnicity.
NHOPI=Native Hawaiian or Other Pacific Islander; AI/AN=American Indian/Alaska Native; HS=high school

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Table 20. Socioeconomic Differences in Timeliness

Measure	Income Difference[1]			Educational Difference[2]		Insurance Difference[3]
	<100%	100-199%	200-399%	<HS	HS Grad	Uninsured
Usual Source of Care[4]						
% of persons who have a specific source of ongoing care	◒	◒	◒	◒	◒	◒
% of persons in fair or poor health who have a specific source of ongoing care	◒	◒	◒	◒	◒	◒
% of persons with a hospital, emergency room, or clinic as source of ongoing care	◒	◒	◒	◒	◒	◒
Unmet Need						
% of families that experience difficulties or delays in obtaining health care or do not receive needed care[5]	◒	◒	◒	◒	●	◒
% of families that experience difficulties or delays due to financial or insurance reasons[v]	◒	◒	◒	●	●	◒
% of persons always can get appointment for routine care as soon as wanted[6]	◒	●	●	◒	●	●
% of persons always can get care for illness or injury as soon as wanted[vi]	◒	●	●	●	●	◒
Waiting Times						
% of persons who usually wait >30 minutes before seeing provider[v]	◒	◒	◒	◒	◒	◒
% of emergent/urgent emergency department visits with wait >=1 hour[7]						●
% of semi-urgent/non-urgent emergency department visits with wait >=1 hour[vii]						◒
% of emergency department visits in which the patient left without being seen[vii]						◒

[1] Compared with persons with family incomes 400% of Federal poverty thresholds or above.
[2] Compared with persons with any college education.
[3] Compared with person under 65 with any private health insurance.
[4] Source: NHIS, 2000.
[5] Source: MEPS, 1999.
[6] Source: MEPS, 2000.
[7] Source: NHAMCS-ED, 1999-2000. This source did not collect information about income or education. Insurance contrast compares uninsured with persons with any private insurance including all ages.
HS=high school

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Table 21 Racial and Ethnic Differences in Patient Centeredness

Measure	Racial Difference[1]					Ethnic Difference[2]	
	Black	Asian	NHOPI	AI/AN	>1 Race	NHB	Hispanic
Patient-Provider Communication[3]							
% of adults whose providers always listened carefully to them	◓	●[iii]		○		◓	◒
% of adults whose providers always explained things in a way they could understand	◓	●[iii]		○		◓	◒
% of adults whose providers always showed respect for what they had to say	◓	●[iii]		○		◓	●
Patient-Provider Relationship							
% of adults whose providers always spent enough time with them[iii]	◓	●[iii]		○		●	◒

[1] Compared with whites.
[2] Compared with non-Hispanic whites.
[3] Source: MEPS, 2000. This source did not collect information on Asians and NHOPIs separately but in aggregate as Asians or Pacific Islander. This source did not collect information for >1 race.
NHOPI=Native Hawaiian or Other Pacific Islander; AI/AN=American Indian/Alaska Native; HS=high school
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◒: Selected population receives worse quality care than the comparison population
○: Data are collected but do not meet criteria for statistical reliability

Table 22. Socioeconomic Differences in Patient Centeredness

Measure	Income Difference[1]			Educational Difference[2]		Insurance Difference[3]
	<100%	100-199%	Uninsured	<HS	HS Grad	Uninsured
Patient-Provider Communication[iii]						
% of adults whose providers always listened carefully	●	●	●	◓	●	●
% of adults whose providers always explained things in a way they could understand	●	●	●	●	●	◒
% of adults whose providers always showed respect for what they had to say	●	●	●	●	●	●
Patient-Provider Relationship						
% of adults whose providers always spent enough time[iii]	●	●	●	◓	●	●

[1] Compared with persons with family incomes 400% of Federal poverty threshold or above.
[2] Compared with persons with any college education.
[3] Compared with persons under 65 with any private health insurance.
HS=high school

Key to Quality of Health Care Tables:
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